

AROUND THE WORLD IN 50 DAYS

"Inside Dope"

by GEORGE F.
TAUBENECK



Cold War In Brussels
Russian Prowess Magnified
Imitation Cinerama
We Should Be
Ashamed, Really
Photographs on Parade

Cold War In Brussels

The Russians should have brought along Lenin's tomb, complete with the mummies.

There are long line-ups daily to see that macabre Moscow mausoleum, we are told. But none of the Communist exhibits at the Brussels World's Fair drew a queue.

In happy contrast, five American features at the Fair—unpretentious, all—have long lines of patient folk waiting at their gates all day long. We cite:

1. *The Soda Fountain.* Banana splits at 81 cents a copy, simple chocolate sodas at 57 cents, and Dairy Queen cones (39 cents) go like mad.

2. *The Typical American "Coffee Shop."* Hungry and lonesome American tourists have a helluva time trying to fight their way into this place. Refrigerated by Frigidaire, it offers hot dogs, cheeseburgers, roast beef and turkey "blue plate specials," pancakes with maple syrup, ice cream, and apple pie. Prices are quite high, but quality is excellent. (Everything is exorbitantly costly in Brussels.)

3. *Cyclorama.* This moving picture "in the round" packs standees into a true theater-in-the-round every half hour. What they see is a neck-swivelling 360° (full circle) movie panorama of American scenes. It isn't too good, actually, but it is free, and evokes gasps occasionally.

4. *Fashion Show.* In the rather empty center of U. S. pavilion, starved-thin models sent by Vogue magazine traipse down a long-descending runway onto a pier in a pool—showing current American dress fashions—then hightail it back up to their dressing rooms. For unaccountable reasons this lackadaisical performance is a showstopper.

5. *Cinerama.* All three Cinerama movies are being shown simultaneously at fat prices—and long lines form three times a day at the ticket windows.

Oh, yes, the American toilets are free, too. For all other pavilions you pay to get in, and often to get out. This is a 10-strike in terms of goodwill for the U.S.A.

Speaking of prices, everything is ultra-expensive at the Brussels World's Fair.

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Future Is 'Out of This World'

Miami Feels Little Slump In Cooling

MIAMI, Fla.—L. P. Gignac, president of the Air Conditioning & Refrigeration Association of Florida, discussing the nation's economic slump, told reporters in an interview:

"As a whole, the air conditioning industry has felt very little recession here. And the future... it's out of this world! There's more work out there than we can handle."

Gignac said that in the year ended March 1, approximately 100 air conditioning contractors in the Greater Miami area had installed some \$18 million worth of cooling equipment.

"That's about 16% more than had been anticipated," commented Howard S. Davis, executive secretary of the association.

"And that unexpected volume was achieved despite a slight dip in the industry's business locally during the past six months," Davis asserted.

"Business fell off very slightly—not more than 4 or 5% from the level of a year ago," he continued. "And most of the decline was in residential air conditioning—approximately 10% under a year ago."

"But in the past 30 days, it's

picked up noticeably," Davis declared. "Very encouraging."

He continued: "Home-building, sluggish in south Florida as elsewhere in the nation until the Federal Housing Administration loosened up on residential building funds this spring, is the key to the pickup. Resi-

dential air conditioning accounts for about 35% of the industry's volume here."

Agreeing on this point, Gignac commented: "Since FHA loosened up, more and more homes in this area are requiring central air conditioning."

(Concluded on Back Page, Col. 4)

GE Cooling Dept. Moving Headquarters Marketing Operations to Tyler, Texas

BLOOMFIELD, N. J.—General Electric's Air Conditioning Dept. will concentrate its headquarters marketing operations at its facilities in Tyler, Texas, and hopes to have the move completed by Sept. 1.

This announcement is being made to the G-E commercial, industrial, and residential air conditioning distributors this week by C. B. Ramsdell, manager, marketing, for the department.

It is stated in the announce-

ment that the move is being made although "some manufacturing is being continued at the Bloomfield, N. J. plant." This would seem to indicate that the bulk of the manufacturing of G-E's commercial and central residential units will be concentrated at the new plant in Tyler, which for the past year has housed the Home Heating and Cooling Div.

Ramsdell was named manager, marketing, in April by

(Concluded on Back Page, Col. 1)

Next Merger Move Up to NAPC Meeting

See Possible Changes In
Association Activities
If Groups Are Joined

DETROIT—With the Mechanical Contractors Association adopting a resolution indicating its willingness to discuss a merger with the National Association of Plumbing Contractors and "any other related trade association having these common interests," the next move towards any such amalgamation would be the adoption of a similar resolution at the NAPC convention June 30-July 3 in Los Angeles.

Failure of the NAPC to adopt a resolution setting up a discussion of merger details would probably postpone any action indefinitely, but the chances of this are thought unlikely.

If the NAPC action is favorable, the MCA has a committee all set to begin work on the details of the merger. Its first step will be to invite local MCA affiliates to offer suggestions and ideas as they may have. Then it will meet with the "merger committee" of the NAPC to discuss the matter.

(Concluded on Page 26, Col. 1)

NAPC To Hear of Heating, Cooling 4-Man Space Station

WASHINGTON, D. C.—Cooling, heating, and plumbing facilities for a four-man space station up in the stratosphere will be discussed at the coming 76th annual convention of the National Association of Plumbing Contractors in Los Angeles.

William K. Brehm, chief of operations analysis of the Astronautics Div., Convair Corp., will tell about them as part of Convair's plan for a space station with complete living quarters.

He will have with him models of the space station which Convair claims can be produced and put in orbit within five years from the date a go-ahead is given by the U. S. Government.

Brehm's talk will be a closing day feature of the convention which will extend from June 29 to July 3 at the Pan Pacific auditorium in Los Angeles. The National Plumbing-Heating-Cooling Exposition will be staged there at the same time.

Monday night, June 30, will be "United Association Night" at the exposition. All members of the piping trades in the area are invited to inspect the show.

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FHA Applications Set Record In May

WASHINGTON, D. C.—A record 90,000 applications for mortgage insurance on dwelling units were received in May, the Federal Housing Administration has reported.

Previous record was 89,764 in May, 1950.

Included in the May total were 34,558 new home units and 55,449 existing units.

FHA said more than 25,000 new dwelling units were started under its inspection during May.

Carrier Reveals Future Objectives, Details Present Plans, Policies

SYRACUSE, N. Y.—The "official word" on some of Carrier Corp.'s present plans and policies, plus a picture of some of the firm's future objectives, came out of a recent press conference designed primarily to provide business editors and financial writers a look at Carrier's new administration and research facilities, opened earlier this year at the Thompson Rd. plant.

The "look at the present and future" involved such things as gas air conditioning systems, new air cleaning and deodorizing systems, research in thermoelectric and nucleonic systems, high speed compression systems, and progress in heat pumps.

Those attending the press conference generally agreed

that Board Chairman Cloud Wampler's statement that "we think we've got a pretty good shop here" was the understatement of the year as they toured the sweeping modern building (all air conditioned, of course).

(Concluded on Page 37, Col. 1)

NEW FEATURE—"The Consulting Engineer's Column"—begins in this issue. It will concern itself with the problems and methods of consulting engineers, and others who are active in application work in air conditioning, heating, refrigeration, and ventilating. The column will be written by men who are active as consulting engineers, or who have contact with field engineering problems.

Quick Action Kills Cincinnati Law on Room Unit Wiring

CINCINNATI—Quick action by industry representatives resulted in repeal of a new city ordinance which would have required that all air conditioners sold after June 6 be installed on separate electrical circuits.

Originally passed on May 7, the law was repealed following a meeting of factory representatives of Fedders-Quigan Corp. and General Electric Co. and local dealers with members of the City Council.

A telegram from the engineering committee of the National Electrical Manufacturers Association, in behalf of the room air conditioner section, reportedly was an important factor in repeal of the ordinance. The wire pointed out that the

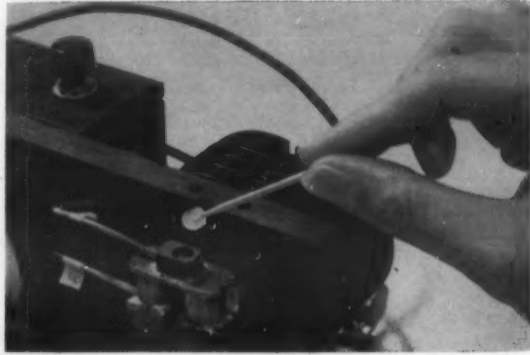
(Concluded on Page 4, Col. 3)

Hotpoint Appoints Compton as Its Sole Advertising Agency

CHICAGO — Compton Advertising, Inc. has been named to handle the \$3,500,000 trade and consumer advertising account of Hotpoint Co., it was announced by Lee J. DiAngelo, manager, advertising-merchandising, Hotpoint.

Hotpoint notified its former three advertising agencies—Maxon, Inc., Needham, Louis & Brorby, and J. R. Pershall Co.—of the change to consolidate all advertising under one agency, last April. During the past 60 days, some 10 agencies solicited for the account.

DiAngelo said that "Hotpoint will now be able to better serve its distributors and dealers with a completely integrated approach to all advertising."



Silent, Motionless Refrigerator

THIS TINY MODEL "refrigerator" which is silent and has no moving parts produced this small ice cube in about four minutes at General Electric Co.'s Engineering Laboratory in Schenectady, N. Y. The refrigerator was designed during development work on thermoelectric cooling. Its principle of operation is similar to that of the thermocouple where a difference of temperature produces an electric current. In the thermoelectric refrigerator the process is reversed and an electric current produces a transfer of heat. The principle of thermoelectricity is not likely to be applied to the household refrigerator soon, engineers said.

U. S. Court of Appeals Rules

Firms Can Legally Discriminate Between Customers On Price If Costs Justify It

WASHINGTON, D. C. — If costs justify such action, firms can legally discriminate between their customers pricewise, the U. S. Court of Appeals ruled recently.

Competition is not a necessary condition to justify price discrimination, the court decided.

"We are satisfied that the (law) proscribes only such discrimination as is inimical to the public interest," it declared.

It added that the Federal Trade Commission must consider any cost justification that can be used to dispel a charge of price discrimination.

FTC has maintained that the only defense against price dis-

crimination is that the discrimination was done in good faith to meet competition or that such inducements were furnished on equal terms to all.

The court's decision was made in response to an appeal by Simplicity Pattern Co., Inc. of New York City against an FTC cease and desist order. FTC had ordered Simplicity to stop giving catalogs and storage cabinets to larger chain stores while charging small fabric shops for the same items.

McElwain and Clary Open Supply Firm In Jacksonville, Fla.

JACKSONVILLE, Fla.—H. L. Clary and R. G. McElwain, former executives of Bryant Mfg. Co. and Carrier Corp., have formed McElwain, Clary, Inc. here, and will handle lines of air conditioning and heating equipment and supplies.

Products will include those of Hart & Cooley, American Blower, Metalbestos, Safti-Vent, LOF Glass Fibers, and others. The firm will also have the north Florida-south Georgia distributorship for Bryant.

Clary resigned as vice president of Bryant to become president of McElwain, Clary. McElwain, who is vice president, was formerly Bryant's sales manager for this region.

McElwain, Clary kicked off its career in mid-May with a cocktail party for its wholesale competitors in the area—"to give them a preview of what our own operation is going to look like."

The following afternoon was "Open House" at the offices and warehouse, 515 Champion Ave., for around 300.



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Single out A-P for triple duty

A-P's complete capacity line of thermostatic expansion valves (1/4 to 25 tons, R-12) is geared to perform on:

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Fixed superheat. R-12, R-22 or Methyl. Capacity: 1/4 thru 1 1/2 tons R-12.



MODEL 207DE
Adjustable superheat. External type equalizer. Capacity: 1/2 thru 3 tons R-12. 1, 2, 3, 5 tons R-22.



MODEL 207C
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MODEL 209
Adjustable pressure limit and superheat. R-12, R-22 or Methyl. In 1/4 thru 1 1/2 tons R-12.



MODEL 214
Adjustable superheat. 1, 2, 3 tons R-12. 2, 3, 5 tons R-22.



MODEL 217
Adjustable superheat. Solder connections. Capacity: 5, 7 1/2, 12 1/2 tons R-12; 7 1/2, 11, 19 tons R-22.



MODEL 218
Adjustable superheat. R-12 (16, 19, 25 tons). R-22 (25, 30, 40 tons). Available with pressure limit.



DISTRIBUTORS
Both flare and solder types. Capacities: flare type thru 3 tons R-12. Solder type thru 40 tons R-12.



CONTROLS COMPANY OF AMERICA

Manufacturers of A-P CONTROLS

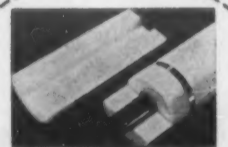
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Write for Book E220 — gives complete data on A-P thermostatic expansion valves.



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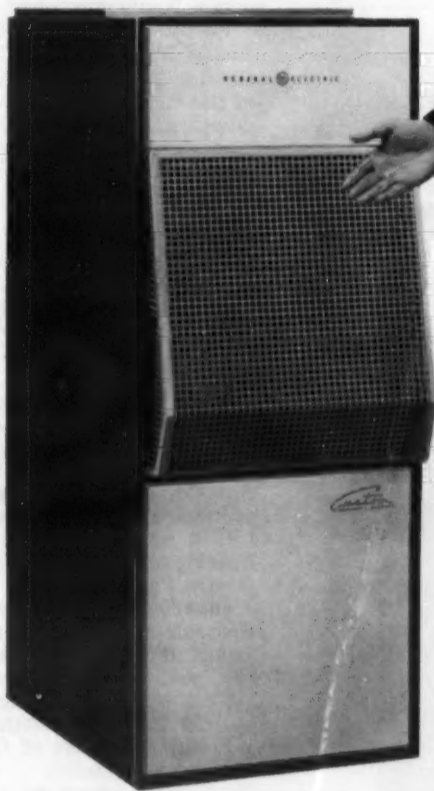
For your copy, clip this ad and mail with name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Fashions in Furnaces

by GENERAL ELECTRIC



ONLY 55" HIGH



"GROWS" INTO
YEAR 'ROUND
AIR CONDITIONING

COOLING
COIL
ENCLOSURE



ALL-NEW *Custom* OIL FURNACE LINE...

COMPLETELY FACTORY ASSEMBLED AND DESIGNED TO BOOST YOUR PROFITS

Ideally priced for the builder market and for the profitable modernization and replacement market. Smallest model takes only 28"x22" of floor space in vertical application. Horizontal-downflow combination can be installed either in downflow position or on either side in horizontal application. Entire line features quick-heating "Vertifin" heat exchanger—dependable safety features. Conventional high-pressure gun

burner and other standard parts permit easy servicing and replacement. Two-tone gray, ultimate in smart design—handsome as a modern kitchen appliance. BTUH output: 84,000 to 168,000 upflow—84,000 to 112,000 combination horizontal-downflow. *Listed by Underwriters' Laboratories and approved by UL as conforming with the U.S. Department of Commerce Commercial Standard CS 195-57.*



OPERATION UPTURN means General Electric will go all out to accelerate an upturn in business in 1958. It will help boost dealer sales and profits. So get in on the ground floor! For complete details of OPERATION UPTURN and a General Electric franchise, call your nearest General Electric distributor—listed in the yellow pages of your phone book—or mail coupon. General Electric Company, Air Conditioning Department, Tyler, Texas.

GENERAL  ELECTRIC

General Electric Company
Air Conditioning Dept., Tyler, Texas
I would like complete information on the General Electric
Air Conditioning Department Franchise—and OPERATION
UPTURN.
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Firm Name _____
Address _____
City _____ Zone _____ State _____

ACD 12

Senate OK's Small Business Loan Bill

WASHINGTON, D. C.—A bill that would provide long term loans and equity capital to small business has been passed by the Senate.

The bill would authorize the Small Business Administration to charter small business investment companies. These companies could then lend money to small concerns for terms up to 20 years with a permissible 10-year extension.

These investment companies could borrow money from S.B.A., which would be provided with a \$250 million revolving fund for loaning purposes. State and local development companies could also tap this fund.

Westinghouse Discriminates, FTC Charges

WASHINGTON, D. C.—Westinghouse Electric Corp. and its subsidiary Westinghouse Electric Supply Corp. were recently charged by the Federal Trade Commission with price discrimination between appliance dealers.

A hearing on the charges has been scheduled for July 28 in Cleveland.

According to FTC, Westinghouse and Wesco charged differ-

ent prices for the same appliances to competing dealers and gave greater advertising payments to favored dealers.

In 1956, the government agency asserted, the spread in refrigerator prices was as much as 20% between retailer customers. The two firms discriminated in advertising allowances by computing on the basis of national rates for some dealers and on local rates for others.

It's a Fur Piece for Texas

NEW YORK CITY—Air conditioning has opened up one of the most lucrative markets of all time for furs—Texas.

So a New York fur designer told the *New York Times* recently.

The designer didn't know, the *Times* said, if Texans demanded furs after they had air conditioned everything that could be walled in or

whether they cooled off the whole state as an excuse to wear furs.

Another sales salon, according to the *Times*, reports that air conditioning has not only brought about a whole new market for furs, but makes it easier to sell them. During an August sale, a woman gets into the spirit of the thing if she is comfortably cool.

Quick Action Kills Cincinnati Law--

(Concluded from Page 1, Col. 4) of wiring needed between the Cincinnati ordinance was not in accordance with provision of the National Electrical Code.

Retailers had indicated that the ordinance would add \$10 to \$100 to the cost of an air conditioner, depending on the length

of wiring needed between the air conditioner and the electric panel. Joseph S. Devine, superintendent of the Fire Prevention Bureau, said that at least seven times to his knowledge air conditioners were involved in fire hazards.

Richard Rheem Retires As Rheem Chairman

NEW YORK CITY—Richard S. Rheem, one of the founders of Rheem Mfg. Co., retired as chairman of the board of directors of the company, it was announced here following a board meeting in Chicago.

Rheem will continue to serve as a director and has consented to serve as a consultant.

Rheem has not participated actively in the management of the company since late in 1956, when A. Lightfoot Walker was elected president and chief executive officer and Rheem became chairman of the board, it was noted.

NAPC Convention--

(Concluded from Page 1, Col. 5) and meet with industry officials. Exposition will be open to the public Wednesday night.

Featured industry speakers during the convention include Charles L. Walling, president of the Refrigeration & Air Conditioning Contractors Association; Peter T. Schoemann, general president of the United Association; John H. White, president and director of the Better Heating-Cooling Council; Norman Wicks, director of the new Plumbing-Heating-Cooling Information Bureau; and William P. Scott, secretary of the Mechanical Contractors Association of America.

From outside the industry, the plumbing contractors will hear messages from Gene Flack, sales manager of Sunshine Biscuit Co.; Dr. Charles E. Irvin of General Motors Corp.; California Governor Goodwin J. Knight; and Los Angeles Mayor Norris Poulson.

Other speakers include NAPC General Counsel George P. Lamb, James Lane of the Eljer Co., and Allan George, Australian plumber who has been touring the United States.

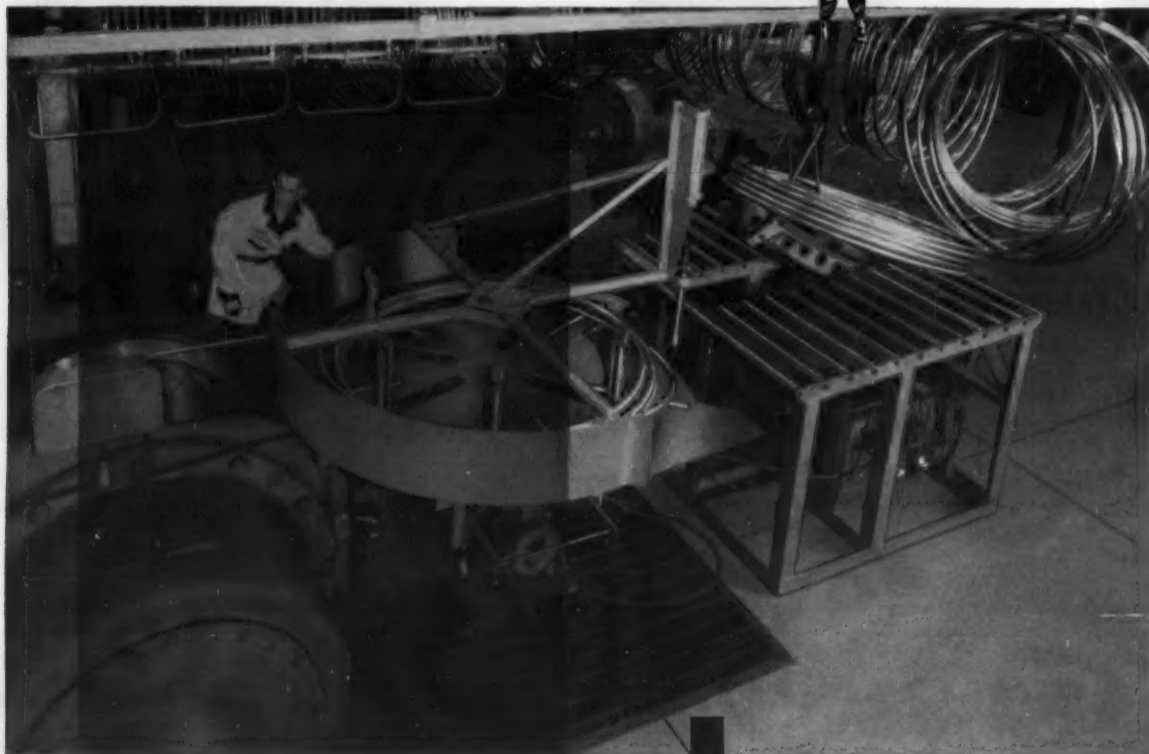
Social highlights of the convention will include a visit to Disneyland topped by a Crane Co.-sponsored buffet dinner at Holiday Land on Tuesday and a wind-up party and dance at the Hollywood Palladium.

PHCIB Schedules Sunday Meeting

CHICAGO—There will be a meeting of the Plumbing-Heating-Cooling Information Bureau at 10 a.m., Sunday, June 29, at the Ambassador hotel, Los Angeles, to review bureau activity to date and its plans for the future.

President W. A. Landers is inviting all bureau members and others who will be at the NAPC meeting in Los Angeles to attend the bureau meeting.

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A battery of straightening machines keeps VIKING Copper Tube absolutely, unvaryingly straight. In addition, these machines precisely temper the tube, imparting to it the correct surface hardness . . . assuring ease in fabrication resulting in substantial savings in time and labor.

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An electronic "Brain" detects the minutest flaw or imperfection in the walls of VIKING tubes . . . automatically discarding defective tubes. Trouble-free fabrication is virtually guaranteed — operational failures almost completely eliminated.



VIKING COPPER TUBE CO.

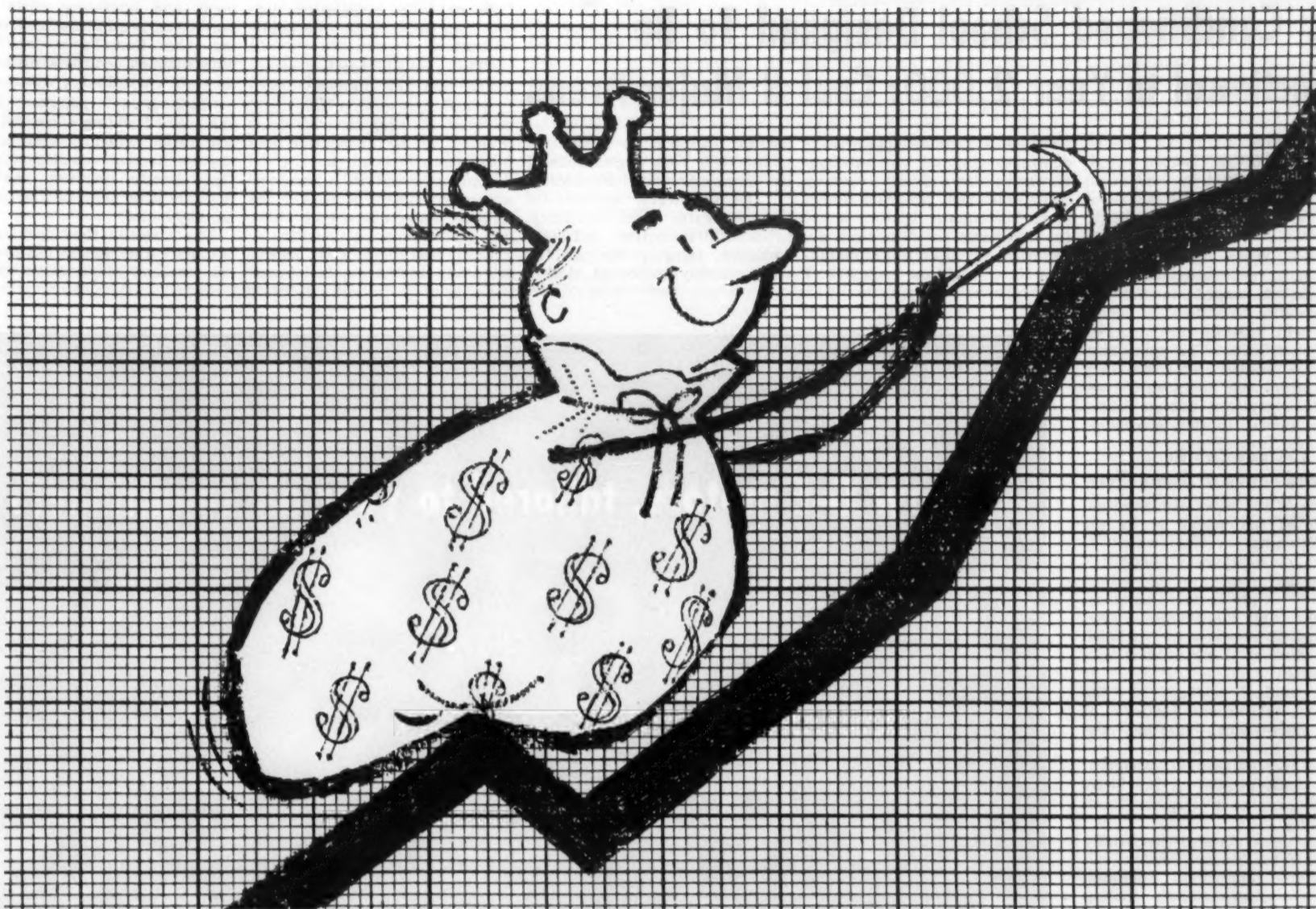
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U.I. & A.S.M.E.
WATER-COOLED
CONDENSERS 1/2 TON TO 15 TONS
 and
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 for
EVERY REQUIREMENT

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★ *reach new profit peaks*

with

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A winning combination of proven selling aids and incentive programs makes Airtemp dealers' cash registers ring. A good case in point is what we call our "Proposal Campaign". Here salesmen are rewarded for presenting proposals and Airtemp makes direct contact with the prospect. Another example is the All-Star Promotion where dealers qualify for a 4-day trip to the Orange Bowl over New Years.

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- The Airtemp line is complete—really complete—with 297 cooling and heating models. They can satisfy *any* cooling or heating need!
- Dealers sell the Chrysler name and Chrysler's famous engineering.
- Airtemp dealers *keep* their initial sale profits because they have fewer customer complaints and service calls.
- Special training for dealers and their personnel at Chrysler Corporation Service Centers.
- Factory advertising in your local markets.

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AIRTEMP DIVISION, CHRYSLER CORP.
DEPT. AC 6-58, DAYTON 1, OHIO

Please send me full information on an Airtemp franchise.

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CITY.....ZONE.....STATE.....

Air Conditioned School Designed To Be Functional In Year 2,000; Cool 3 Major Areas

SCHENECTADY, N. Y.—The new \$4,328,130 Linton High school here could be considered an indication that the school of the future will be air conditioned.

Three years ago, Harry J. Linton, superintendent of schools, challenged his staff and community to "Plan a school that will still be functional in the year 2000." The sprawling, 15-acre series of one-story structures that compose the recently completed Linton school is an answer to that challenge.

2 of 3 Areas Can Be Conditioned at Same Time

One of the most discussed aspects of the school is its air conditioning system which is said to adequately condition three major units of the school—the Core-Techs building, library, and auditorium—even though it is sized to condition only two of these units simultaneously.

Mechanical cooling for the library, classroom sections of the Core-Techs building, and the auditorium has been provided from a central refrigeration plant located at the heart of the campus in the Core-Techs building.

The plant consists essentially of a 235-ton Trane "CenTraVac" hermetic centrifugal compressor, an induced draft cooling tower, a condenser water circulating system, and a chilled water circulating system.

The capacity of the central plant is ample to serve the requirements of the Core-Techs building and the library simultaneously, and the system is piped to permit air conditioning of the auditorium when the classrooms of the Core-Techs building are not in use, according to Trane.

The Core-Techs building contains six separate and distinct areas, of which five are for instructional purposes and one for administrative use. Each of the five instructional areas consists of a multiple number of classrooms. Area designations are: 1) Trade Shops, 2) Science, 3) Arts, 4) Family Living, 5) Commerce, and 6) Administration.

Trade Shops Not Cooled

All areas in the building with the exception of the Trade Shops are air conditioned. Multiple classroom areas 2, 3, 4, and 5 are each encircled by corridors, and exposure is entirely internal except for the roof exposure.

The Administration area is essentially conventional office space with exterior walls containing expansive glazed area.

Concentration of so many interrelated areas under one roof—a planning requirement of the educational program, created both lighting and ventilation problems. Actually 80% of the instructional areas in the Core-Techs building is "in-board" space and required supplementary illumination and mechanical ventilation.

One "natural" illumination solution considered was placement

of a grid of plastic skydomes throughout the building. However, the strong evening adult education program necessitated adequate lighting levels for nighttime use. The total dependence on electrical illumination for classrooms, exclusive of

natural lighting, is recognized in the New York Regulations of the Commissioner of Education.

"The engineer's analysis of the heat gains from occupancy, artificial illumination, and solar radiation (largely through the roof) clearly indicated that a

high capacity ventilation system was needed," it was pointed out.

"The analysis further established that the highest capacity ventilation system that could be used, in keeping with good practice in air circulation and noise control, could not be expected to maintain a comfortable environment whenever the outside temperature rose above 65° F.

The architects then calculated the initial capital invest-

ment and operating costs involved in ventilating and cooling the Core-Techs building with a zoned central ventilation and air conditioning system.

"This study indicated that the cost of adding a central refrigeration cooling system to the mechanical ventilation system already required was no greater than that of the plastic skydomes.

"As a result, they decided to eliminate the plastic skydomes, use artificial illumination which

How G-E motors, tailored to your air conditioners



was necessary anyway, and install a year-round air conditioning system on an individual zone control basis."

Each group of classrooms in the Core-Techs building was provided with a separate air handling system. Each system contains outdoor air and recirculating air ducts with automatic percentage proportioning controls, an automatic self-cleaning air filter of the viscous fluid impingement type, a chilled water cooling coil with three-

way water valve and face and by-pass dampers, a Trane centrifugal fan, and a multiple-zone reheat mixing box with hot water blast coil.

Each classroom has individually controlled zone mixing dampers. Zone ducts distribute air to conventional ceiling diffusers in classrooms.

Return air is relieved through louvers in classroom doors and thence returned to the system via return air grilles in the corridor ceiling or expelled

through roof type gravity relief ventilators.

The Administration area was provided with an air handling system similar to that for the classroom areas except that this system was zoned by exposure rather than by individual room. Finned pipe radiation beneath the windows supplements the winter warm air cycle and blankets the cold glass area.

The Library air handling system is similar to the Administration area system ex-

cept that in lieu of finned pipe radiation and ceiling diffusers, air is supplied through registers at sill line or from above book stacks and effectively blankets loads at windows.

The Auditorium air handling system is a conventional chilled water coil system with steam reheat coils for stage and auditorium. Summer control is either face and by-pass or dew-point-reheat at operator's option.

All of the various air condi-

tioning and ventilating systems are controlled from a central temperature control panel. From this panel, the operating engineer can transfer any system from the "day" to the "night" cycle operation or any air conditioning system from "summer" to "winter" operation. The transfer can be made either manually, or automatically on a program clock schedule.

On the "day" cycle, all ventilating systems are placed in operation and normal temperatures are maintained throughout the buildings. On the "night" cycle, during the heating season, all ventilating systems are shut down and the buildings are maintained at a reduced temperature.

Supply ventilating systems will, where necessary, operate start-stop at 100% recirculation on the "night" cycle to assist in maintaining minimum heating temperatures.

The "day" control for the air conditioning systems during the cooling season consists of dew-point control for the chilled water coils with individual reheat mixing damper control for each zone controlled from a zone thermostat.

The "night" control of the air conditioning systems, during the cooling season, consists of face and by-pass damper control for each cooling coil, minimum outside air control, and individual zone control through the individual reheat mixing dampers and zone thermostats.

This system is expected to provide reduced room temperatures during the summer "night" cycle, when the buildings are unoccupied, with a minimum of refrigeration load. The transfer will be accomplished by a manual selector switch for each system.

The hot water heating system operates continuously for all outdoor temperatures below 65° F., and the water temperatures are automatically varied in inverse ratio to outdoor temperatures. In addition, critical occupied areas are provided with individual room control for finned radiation. During the "night" heating cycle, all radiation will be controlled to a reduced night setting of 65° F.

All blast and chilled water circulating systems have been designed for circulation of a water mixture containing 35% ethylene glycol solution to minimize the danger of coil freezing and to eliminate the need for seasonal drainage.

See Greater Year-Round Use of Buildings

In the opinion of both the school administration and the architects, the flexible air conditioning provisions should contribute materially to increasing the year-round day and evening use of Linton High school and help keep it functional until the twenty-first century.

Linton High was designed by the architectural firm of Perkins and Will, of Chicago and White Plains, N. Y., and constructed under direction of their Schenectady associates, Ryder & Link.

The air conditioning system was designed by E. R. Gritschke and Associates Inc., consulting engineer in Chicago, and it was installed by Tougher Heating and Plumbing, Inc., Albany.

help you

design and market new products faster

To simplify your air conditioning design problems, you're looking for a particular motor which will give you the high power factor and efficiency you need. Chances are you'll find a standard motor that will satisfy your needs in General Electric's complete line of Form G motors.

IF A NON-STANDARD MOTOR IS NEEDED to solve your problem, General Electric application engineers are ready to help you get the best motor for your air conditioner. They'll help you tailor a motor to meet your performance and cost requirements . . . and give you fast sample service to help speed your production cycle.

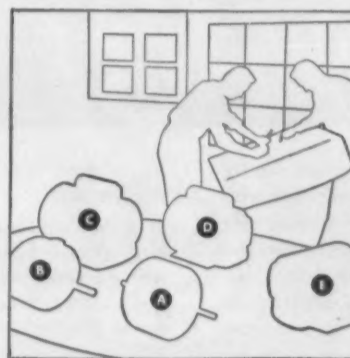
YOU GET ON-SCHEDULE DELIVERY of the motors you need to get your product into production without delay . . . a service made possible with General Electric's flexible, multi-plant manufacturing facilities.

THE DEPENDABLE PERFORMANCE of Form G motors has been proved by the outstanding record of the millions of motors put in use since G.E. pioneered the design of these smaller, lighter motors. Greater customer satisfaction is yours because of such features as G.E.'s scientifically designed lubrication system, and virtually moisture-proof insulation system.

These are only a few of the many G-E motor benefits that will help to keep your new design program on schedule, and improve your product as well. If you'd like to get help on a specific problem, contact your nearby G-E Apparatus Sales Office. For more information on Form G motors, write for Bulletins GEA-6424 and GEA-6533, General Electric Co., Section 702-76, Schenectady 5, N. Y.

FOR DIRECT-DRIVE ROOM UNITS,
FOR DIRECT DRIVE CENTRAL UNITS,
FOR BELT-DRIVE CENTRAL UNITS,

- A permanent-split-capacitor thru ¼ hp;
- B shaded pole thru ¼ hp;
- C cap.-start thru ¾ hp at 1725 rpm, thru 1 hp at 3450 rpm, and
- D perm.-split-cap. thru ¾ hp;
- E split-phase thru ½ hp.



Progress Is Our Most Important Product

GENERAL  ELECTRIC

Warmer Water Forces Switch

From Washed Air To Mechanical Cooling

DAYTON—After using a "washed air" system of cooling for 25 years, the 20-story Hulman building—tallest in Dayton—has installed a mechanical air conditioning system.

Actually, the building, which is claimed to be the first major office building in the nation to be completely air conditioned, has modernized rather than replaced its initial cooling system.

Now equipped with a 250-hp. Airtemp centrifugal water chiller, installed by Refrigeration Equipment Co., the building continues to use its old cooling coils, air handling units, and other components.

In the past, air has been cooled by well water, then circulated through the building by air handling units. Water re-

quired for the cooling has been pumped from a 125-ft. well at a rate of 4,800 gals. every seven minutes.

But, as Park Wineland, building manager, explained, the cooling potency of the well water has been gradually diminishing.

Over approximately the past 10 years, the temperature of the water pumped from the well has risen from 54° F. to 60° F.

Geologists attribute the rise to several contributing factors. One is the fact that water is being extracted from the ground faster and in greater volume. Another is the re-introduction of the used water at higher temperature into the underground source through disposal wells.

These wells are mandatory in

most municipalities because the dumping of the increased well water into sewage systems imposes impossible loads on these systems.

The warming of the underground water—a situation prevalent also in other major urban areas of the nation—has progressively lowered the efficiency of the "washed air" cooling method.

Says Wineland, "The 60° water now being pumped is entirely too warm to do a fully acceptable cooling job. On a hot or even medium-hot day, the water does not have sufficient heat absorption capacity to lower the temperature enough to satisfy the comfort preferences of all tenants."

The fact became more notice-

Story In Brief

The Job: 20 story Hulman building, Dayton.

The Goal: Effective air conditioning.

The Problem: Well water warming up so washed air system could not function efficiently.

The Solution: Install water chiller.

Equipment Used: 250-hp. Airtemp water chiller using "Freon-113," Johnson controls.

Air Conditioning Contractor: Refrigeration Equipment Co., Dayton.

able last season. Therefore, Hulman management made the decision to switch to refrigerated cooling."

The building's original system cooled the air by forcing it through banks of water sprays located on the first, third, and eighth floors. And, as the heat laden water could not be reused, 4,800 gals. flowed down the drain every seven minutes.

With the new arrangement,

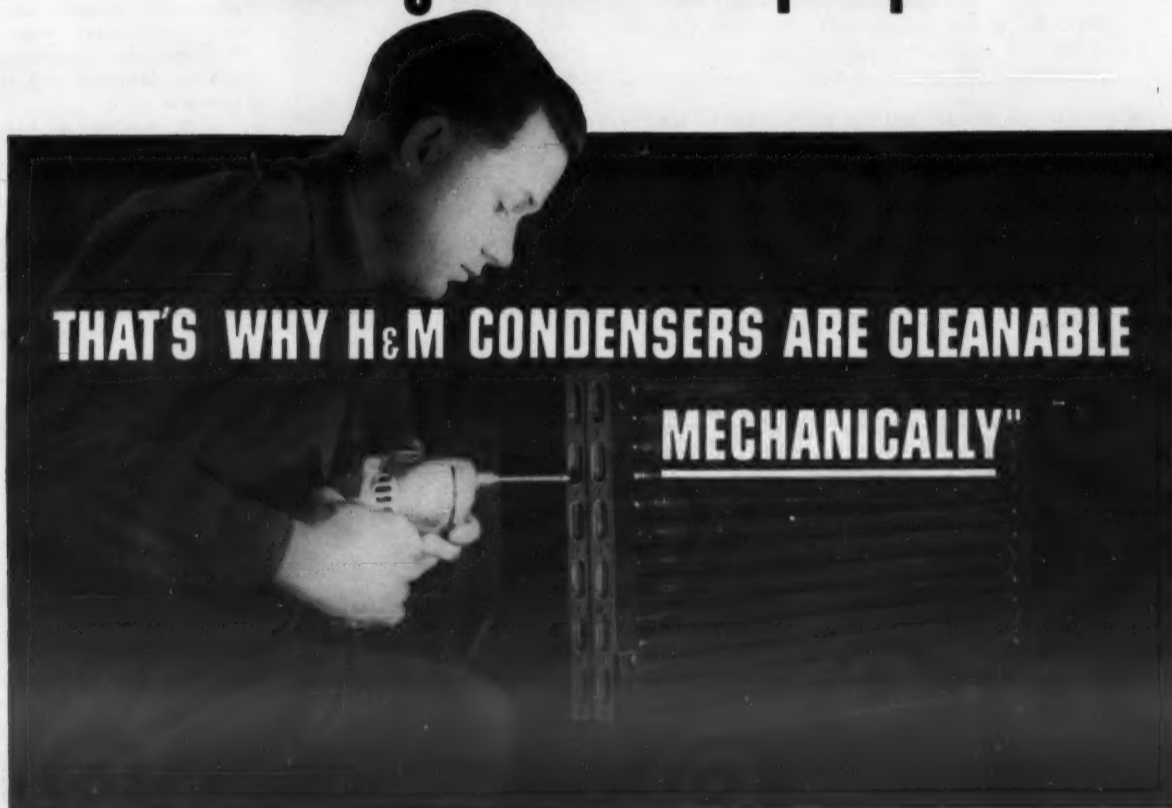
air is cooled and dehumidified when blown over coils containing chilled water. Having performed its cooling function, the water is no longer wasted. It returns to the chiller, located in the building's sub-basement and is recooled for reuse. Chiller uses "Freon-113" refrigerant.

Airtemp Construction Div. of the Chrysler Corp. furnished the centrifugal chiller system along with the control panel for the refrigeration cycle. Engineers of Dayton Power & Light Co. increased transformer capacity by installing two 450 KVA transformers.

Consulting engineer was James A. Ahart; plumbing contractor, C. E. Schulz & Son; electrical contractor, George C. Turner, Inc.; controls, Johnson Service Co.

SO HALSTEAD & MITCHELL ENGINEERS SAID:

"Harsh chemical cleaners ruin condensers, cooling towers and pumps



Scale and sludge which reduce heat transfer can be removed easily from Halstead & Mitchell Cleanable Water-Cooled Condensers. A simple, spiral cleaning tool—available from your local H & M distributor—and an ordinary electric drill can be used to clean the water tubes safely, mechanically. No need to use strong chemicals, which can seriously shorten the

life of your condensers and ruin cooling towers and pumps, too.

H & M Condensers have double-tube design, seamless copper tubes. Counterflow of refrigerant and water assures maximum heat exchange. Brass headers are quickly removed for cleaning. All H & M units are U/L approved for use with Refrigerants 12 or 22.

ALL H & M WATER-COOLED CONDENSERS ARE CLEANABLE

STANDARD DUTY (Type EL) are made with extended surface water tubes. Ideal for water-cooled systems under all average conditions. 1/3 thru 3 tons.

HEAVY DUTY (Type T) condensers have a highly favorable fouling factor and are designed for long service between cleanings. 1/3 thru 25 tons.

SEA WATER DUTY (Type SW) are made with cupro-nickel water tubes and naval brass headers for resistance to impure water. 1/3 thru 25 tons.



Ask for H & M products at your distributor's. Write for descriptive literature. Halstead & Mitchell, Bessemer Bldg., Pittsburgh 22, Pa.

WATER-COOLED CONDENSERS • COOLING TOWERS • AIR COOLED CONDENSERS • FINNED COILS

49 Trion Units Clean Air In 60-Story Building

NEW YORK CITY — The "world's largest" electronic air cleaning system, capable of cleaning over 22 million cubic feet of air, will be installed in the 60-story Chase Manhattan Bank building now under construction.

So stated Trion, Inc., McKees Rocks, Pa., in announcing that it has been awarded a contract for 49 electronic air cleaning units which will comprise the entire air cleaning system.

The Chase Manhattan building will have Trion model 8 field assembled units placed throughout the building. The units will clean two million cubic feet of air per minute, according to Trion.

N. Y. High School Is Fully Air Conditioned

NEW YORK CITY — The Rhodes School at 11 W. 54th St. here has become the first secondary school in the city to be fully air conditioned, according to F. J. Laughna, general manager of Chrysler Airtemp's local factory branch.

Kooltemp, a local Airtemp dealer, installed 90 tons of Airtemp packaged equipment to serve the school's 32 classrooms, laboratory, library, and assembly and study halls.

Enrollment at Rhodes, approximately 600 day students and 650 evening students, is maintained year around on a 12-month basis.

Operating Costs of Residential Air Conditioning and What This Means to Dealers and Installers. By R. A. Gonzales—25¢ each.

Get your copy Mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort St., Detroit 26, Mich.

the quality tells... the quality sells

new **JANITROL** waterless

ADD-ON COOLING SYSTEM



adapts most any warm air furnace
for powerful, efficient summer cooling
... features exclusive PRIDE O' YARD
air-cooled compressor-condenser unit



add to your profits...
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with

JANITROL

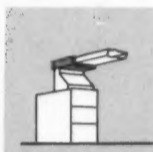
ADD-ON COOLING

quality engineered and built
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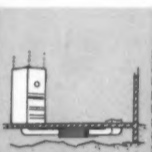


Exclusive JANITROL Evaporator Coil design allows installation in either horizontal or vertical position. Features fast drain-off of condensate to minimize re-evaporation into circulating air during compressor "off" cycle. No floor space needed, no noise or vibration because there are no moving parts inside the house!

Install Janitrol Add-on cooling in homes with or without a basement . . . provide full central cooling with big savings by using existing ducts!



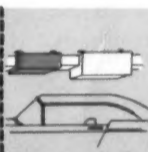
To adapt a low-boy furnace for summer cooling, the cooling coil section is installed in supply air duct.



When warm air ducts are placed in crawl space, the cooling coil supplies efficient cooling.



In adapting a high-boy furnace (up-flow) for summer cooling, the cooling coil section can be mounted in the supply air duct as shown.



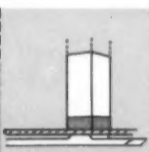
Here, the cooling coil adapts a horizontal furnace in the garage for summer cooling.



If space permits, the cooling coil can be used with a high-boy furnace, as shown here.



In this installation, a horizontal furnace and the cooling coil in the attic are the key to summer cooling.



For a Janitrol down-flow furnace, used with perimeter heating, simply raise the furnace and install the cooling coil beneath it.



An auxiliary blower is available for installation where existing blower capacity is inadequate. Here is a cooling coil plus auxiliary blower in attic.

JANITROL HEATING AND AIR CONDITIONING DIVISION
Surface Combustion Corporation, Columbus 16, Ohio
In Canada: Moffats Ltd., Toronto 15

Please show me how I can sell and grow with new Janitrol ADD-ON COOLING and other quality-built Janitrol products for home comfort.

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COMPANY _____
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Fill in and MAIL TODAY. No obligation.

If you're looking for big, new profit opportunities without installation and service headaches, Janitrol ADD-ON waterless cooling is made to order for you.

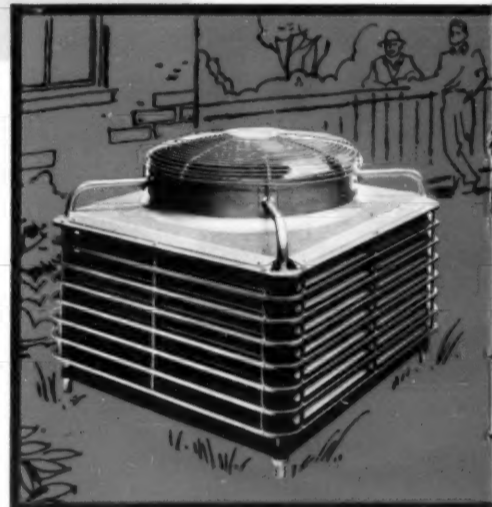
With the complete Janitrol ADD-ON Cooling line, you can adapt most any forced air furnace for *really efficient* central cooling . . . cash in on the booming market for summer comfort.

ADD-ON COOLING components are system-engineered for easy installation with quiet, powerful performance that makes one job sell another. Evaporator coil fits in supply outlet duct in either upflow or downflow systems. The beautiful Janitrol PRIDE O' YARD Compressor-condenser unit—styled by a leading designer—is specially engineered for cooling with outside temperatures to 125° F. And waterless operation eliminates plumbing, sewage and water supply problems—lets you install cooling for *less*, and appeal to more prospects.

Janitrol evaporator coil and PRIDE O' YARD units are available in sizes to handle the heat gain on most any residential cooling job. Get the good word on Janitrol waterless ADD-ON Cooling from your Janitrol representative, or mail the coupon to us right away. Sell and grow with Janitrol!

Exclusive JANITROL PRIDE O' YARD Compressor-condenser Unit

adds distinctive beauty to any yard—completely outmodes all other units of its type. Exclusive louvered design allows air circulation from all sides while shading condenser from sun at all times . . . boosts cooling efficiency and results in lower current drain. Air exhausts out top, instead of sides . . . no damage to nearby growing things from exhaust air. Rugged, weatherproof construction with every necessary safeguard for children and pets. Compressor-motor is hermetically sealed for years of trouble-free performance—warranted in writing for five years!



CAPACITIES

SRA-7	22,000 btu	A-403	45,000 btu
SRA-9	35,000 btu	SRA-11	58,500 btu
A-401	45,000 btu	A-603*	76,000 btu

*Not illustrated—for larger residential and light commercial applications.

Sell and Grow with JANITROL

Ask your Janitrol representative for all the facts, or RUSH the coupon to us today!

From JANITROL—a complete line of gas and oil furnaces, unit heaters, conversion burners, air-cooled summer cooling conditioners, combination heating-cooling conditioners.

Refrigeration Plays Role During, After Dam Construction

Total Cooling Load Amounts to 3,000 Tons

WAYNESBORO, Pa.—Refrigeration will play an important role both during and after construction of the huge dam about to be built at Glen Canyon on the Colorado River, some 370 miles above the famous Hoover Dam.

To be the second highest in the U. S., the new dam will have a height of 700 ft., and will be approximately 1,500 ft. long at the crest. A power plant, to be built below the dam, will have eight giant electric generators, each driven by a waterwheel of 155,500 hp.

Over 5,000,000 cubic yards of concrete will be poured to form the dam and power plant, according to a report on the project by Frick Co. here.

"To overcome the tremendous heating effect as the concrete sets, the entire mix, including the stone, sand, cement, and water, will be pre-cooled to a temperature below 50° F. before being poured," the report disclosed.

"In addition, more than 80 miles of 1-in. pipe will be imbedded in the dam, and chilled water will be pumped through the pipes continuously for several years."

The total cooling load, amounting to some 3,000 tons of refrigeration, will be carried by ten Frick ammonia compressors. Eight of these machines will be of the largest size, each having four big cylinders, Frick pointed out. The compressors will be connected to ten shell-and-tube water coolers, and seven shell condensers.

This equipment, which with the auxiliaries will fill between 15 and 20 carloads, was sold through Lewis Refrigeration & Supply Co., Seattle. The refrigerating work is part of the \$108-million contract for the dam, which was awarded to Merritt-Chapman & Scott Corp. of New York City.

The dam-construction contract is the largest single one ever awarded by the Bureau of Reclamation of the U. S. Dept. of the Interior. Total cost of the project is estimated to be over \$300 million.

Work will extend over seven years, during which the river will be diverted through two 2,768-ft. tunnels, each 45 ft. wide, in the sandstone walls of the canyon. A steel highway bridge, the highest in the country, will be completed next year.

Between ten and 20 years will be required to fill the lake, 186 miles long, that will rise behind the dam. This is because an agreement reached between the states in 1922 calls for 7,500,000 acre-feet of water to be released annually, it was noted.

41-Yr.-Old Unit Replaced—New One Triples Capacity In 1/3 the Space

ROCHESTER, N. Y.—A flip of a switch recently started one of the largest single brine chilling units ever installed in the United States. It is located at the Eastman Kodak Co.'s Kodak Park Works here, and makes available up to 1,200 tons of refrigeration for a myriad of processes in making film.

The new unit is a multi-stage centrifugal refrigeration compressor installed by York Corp., subsidiary of Borg-Warner. It replaces "Old No. 5," a steam-driven reciprocating compressor installed by York almost half a century ago.

The new unit occupies about one-third the space of

the old while delivering approximately three times as much refrigeration capacity.

The new compressor is a three-stage York turbo unit utilizing Refrigerant-12 and operating at about 4,400 r.p.m., driven by a 2,500-hp. Westinghouse synchronous motor and speed increased gear.

It cools 25% calcium chloride brine from 19° to 9° F.—while flowing at a rate of 3,390 g.p.m. It requires 3,600 g.p.m. of water on the condenser at 85° F. and off the condenser at 96.2° F.

A total of 3.53 miles of copper tubing in the condenser, which is a York multi-pass water-cooled type, pro-

vide a heat exchange surface equivalent to almost one-quarter of an acre.

The brine chiller is a York multi-pass unit containing the equivalent to 5.28 miles of tubing. The heat exchange surface here is greater than a quarter of an acre.

The new 1,200-ton brine chilling unit is only about 18 ft. 6 in. wide, 25 ft. long, and 13 ft. 7 in. high. By comparison, the machine it replaced was 24 ft. wide, 40 ft. long, and 30 ft. high.

Most modern unit of its day when it was installed by York in 1916, "Old No. 5" was a Corliss valve steam engine-driven, angle-type, two-cylinder, single-acting,

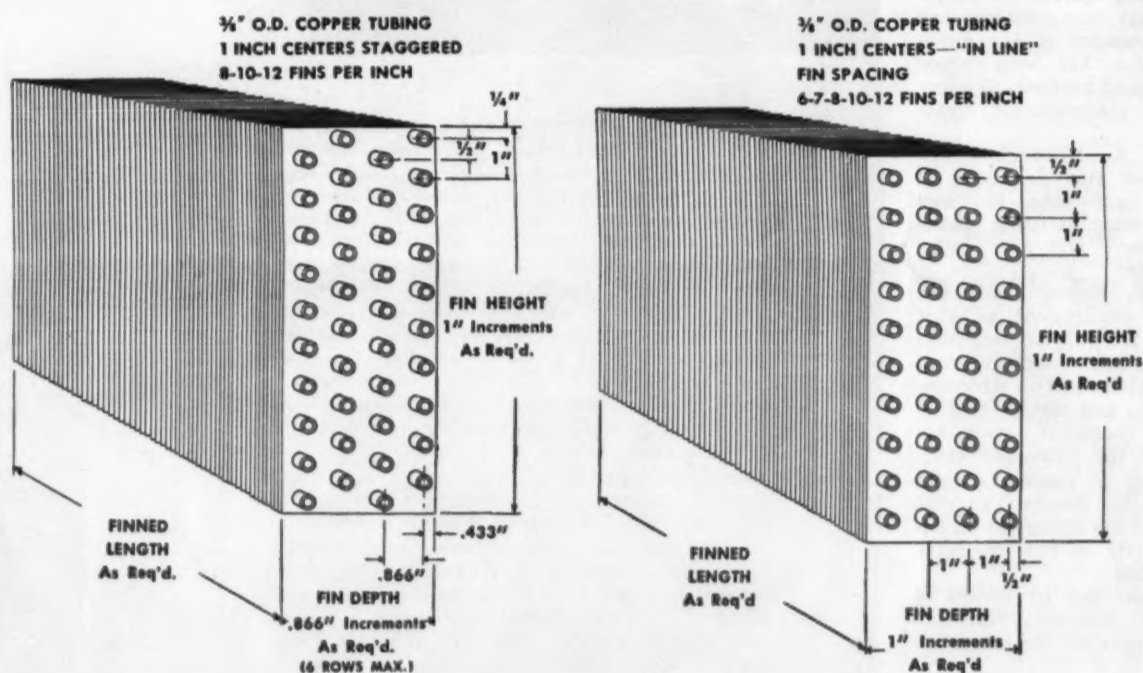
reciprocating, ammonia compressor.

No. 5's ammonia cylinders had a 34-in. bore with a 48-in. stroke. The high-pressure steam cylinder had a 36-in. bore with a 48-in. stroke, and the low-pressure cylinder had a 56-in. bore with a 48-in. stroke.

The machine was designed to run at 60 r.p.m. being fed with 135-lb. steam to one cylinder, from whence it is exhausted to a second cylinder and then exhausted at 5 lbs. to the low-pressure steam system at Kodak Park.

During this machine's 41 years of service, it produced over two million tons of refrigeration.

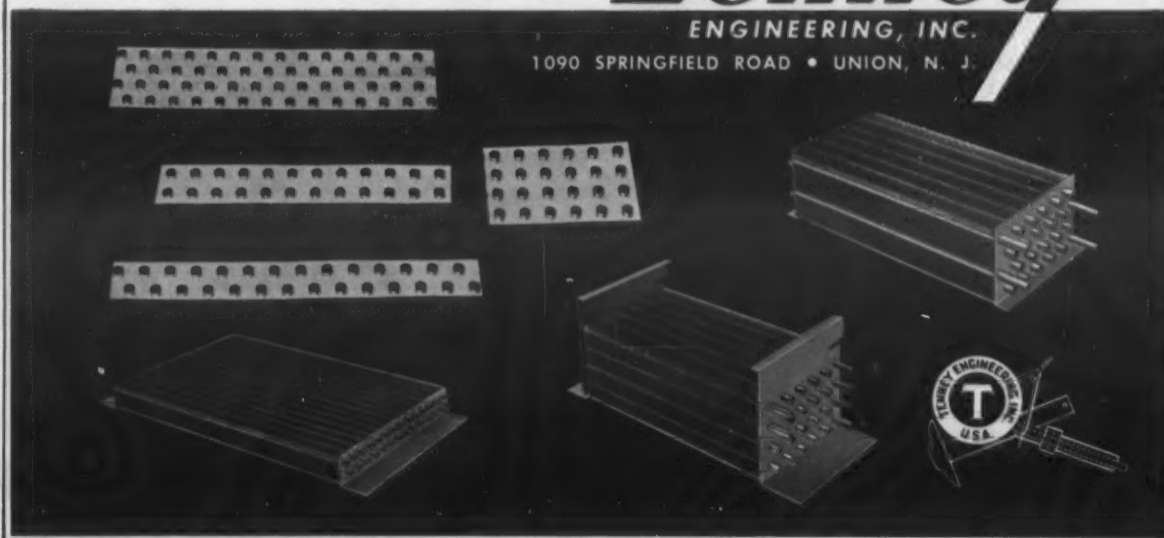
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"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Only 25¢ each.

Head NEMA Room Air Conditioner Section

J. B. Ogden (r.) of Whirlpool Corp. is chairman of the recently formed NEMA Room Air Conditioner Section. Vice Chairman, Paul Augenstein, General Electric Co., is shown at the left.



Remington To Meet 'More Severe' 1956 ARI Room Unit Tests

AUBURN, N. Y.—According to a general announcement which has been sent to its domestic and export marketing organizations, the Air Conditioning Div. of Remington Corp. "will continue to design and produce air conditioners which satisfy the maximum operating conditions' tests of the Air-Conditioning & Refrigeration Institute that were adopted in 1956, rather than the less severe tests required under the revised, recently published 1958 standards."

This policy will apply to both window and "Wall-Way" units, it was pointed out by Remington.

Herbert L. Laube, president, said that "Because of the severe

	Room Air Temp. °F.		Outside Temp. °F.	
	1956 db	1958 wb	1956 db	1958 wb
Maximum Operating Temperature Test	95	75	90	73
Low Temperature (anti-freeze) Test	65	55	67	57
Insulation Efficiency (anti-sweating) Test	80	77	80	75
Condensate Disposal (anti-drip) Test	80	77	80	75

operating conditions in the tropics and the importance of the export business to our organization, we are not prepared to lower the standards to which our overseas customers have become accustomed."

In addition, he pointed out that the maintenance of these higher standards "would improve the operating reliability of units sold on the domestic market and afford greater protection to the firm's domestic customers."

The Remington announcement

compared the 1956 and 1958 standards as shown in table above.

While the 1956 standards will be continued in force by Remington for minimum standards for all of its room air conditioners, certain export models intended particularly for the tropics will continue to be built for operation at maximum outdoor temperatures of 122° F. d.b. with a variation of input voltage of plus or minus 6%, it was stated in the announcement by the company.

Philco Reorganizes Consumer Products Div.

PHILADELPHIA — After a year's study, Philco Corp. has reorganized its consumer products division to separate the functions of product planning and operations, James M. Skinner, Jr., president, has announced.

Larry F. Hardy heads the division as vice president and general manager. He previously bore the title of executive vice president of consumer products. The division includes Philco's appliance and electronic products.

Among the switches in titles and duties involved in the reorganization, Harold F. Schaefer, formerly vice president and general manager of the appliance division, has been named vice president-product development and planning for appliances.

William A. McCracken has been named vice president of appliance operations. He was formerly manufacturing manager of home and auto radio departments.

Henry E. Bowes heads the marketing department as vice president. He will be responsible for the sale, merchandising, promotional activity, advertising, service, and distribution of all Philco consumer goods, according to the announcement.

Reporting to Bowes is John A. Rishel, Jr., formerly general manager of the refrigeration department. He is now manager of marketing.

Also reporting to Bowes is Gibson B. Kennedy, formerly sales manager of the television division.

He is now general sales manager of all consumer products with supervision of the Philco sales force.

Reporting to Kennedy are four area sales managers: Jim McMurphy in the east, Reese Llewellyn in the midwest, John Ramsey in the south, and Paul Burks in the west.

They will supervise 11 division managers who in turn will direct a staff of 69 district representatives.

James J. Shallow, formerly general manager of the home radio division, has been named general manager of merchandising for the marketing department.

He will supervise five product merchandise managers and five product advertising and promotion managers.

Skinner said that he expected Philco to be in the black in June for the first time this year. He indicated that air conditioners have sold fairly well but that appliance sales have been pretty bad and "we have not seen the usual seasonal upturn."

Chattanooga Sales

CHATTANOOGA, Tenn. — April sales of home air conditioning units by area dealers totaled 205, including 12 central units, according to a report by the Electric Power Board of Chattanooga.

In addition, dealers sold four heat pumps and 12 electric furnaces for residential use, and 23 commercial air conditioning units.

Tecumseh

engineering

VISION

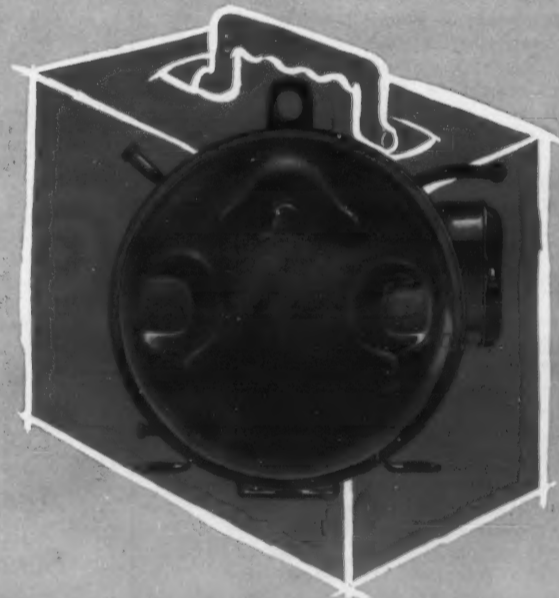
35 MILLION COMPRESSORS IN THE FIELD

for 1958

Keeping ahead of the rapid steps being made in the room air conditioner field, Tecumseh now offers 17 new hermetic compressors designed to accommodate every application problem. Regardless of whether the demand has been for more compact units, higher capacities, greater dependability, lower costs, or plug-in convenience . . . Tecumseh ENGINEERING VISION has supplied the answer. By working closely with our customers we have been able to anticipate these development requirements and immediately include them in our compressor production. The responsiveness of these engineering and mass production facilities permits Tecumseh alone to offer the industry the most complete up-to-date line for this application.

Tecumseh has provided the first practical compressor solution to portable air conditioning in the new 1/2 HP, AR26. This high speed Pancake model is the most compact, lightweight compressor on the market. For "plug-in" application, Tecumseh offers three compressor models for 115 volt-7 1/2 amp units. One of these—the Model B8513—represents the first twin cylinder 7 1/2 amp compressor in the industry. We have also expanded the 115 volt—12 amp models to include both single and twin cylinder, high capacity compressors. PSC motors have been incorporated into most of these compressors. This has eliminated the necessity for additional electrical components, and provided a savings in the ultimate cost of the unit.

The Tecumseh line of room air conditioning compressors allows a customer to match a compressor to his unit with extreme accuracy. Each compressor has been rigorously field-tested and, in many cases, already has millions of counterparts in actual operation. Greater capacity in a smaller physical size, higher BTU per watt, operational economy as well as low initial cost, are features built into every Tecumseh air conditioning compressor. Additional new models are constantly in development, guaranteeing Tecumseh customers the best compressors first . . . an advantage we are determined to continue to provide.



1/2 HP PANCAKE

To meet the need for a suitable compressor for portable air conditioners, Tecumseh offers the Model AR26. Utilizing the popular pancake design, this compressor requires less room, weighs only 31 pounds, yet delivers 5150 BTU/hr.



The Leader Serving Leaders In The Air Conditioning And

TECUMSEH PRODUCTS

EXPORT DEPT. — P.O. Box 2280, 24530 Michigan Ave.,

ILG Offers New Air-Cooled Central Air Conditioners

CHICAGO—A new line of self-contained, air-cooled, central air conditioning units for commercial buildings as well as residences has been announced by ILG Electric Ventilating Co. here, which is also introducing a new line of gas-fired unit heaters.

The air conditioner line includes two 2-hp. and two 3-hp. units and a 4-hp. unit. The five models cover a capacity range from 19,700 to 40,000 B.t.u./hr., the company said, adding that they can be used with existing warm-air ducts or separately.

The large motor-driven blowers used run at low speeds for quiet operation, it was noted. Glass fiber insulation has been provided to further deaden operational noise.

The conditioner's sheet metal parts, the company states, are corrosion-resistant and the units



ILG self-contained, air-cooled central air conditioner.

can be installed indoors or outdoors without providing additional "housing" protection. Cabinets are Bonderized before baked enamel is applied.

The new conditioners are said to be especially suitable for applications where space is a limiting factor. The over-all dimensions on the 4-hp. model, for example, are 59½ in. by 32 in. by 24 in.

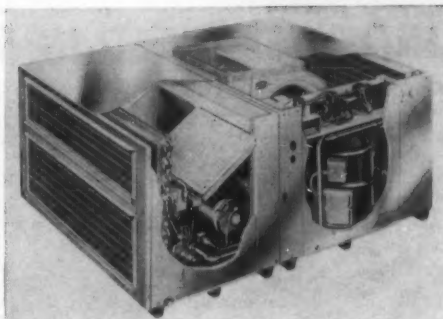
Ten new gas-fired automatic unit heaters with capacities ranging from 25,000 to 250,000 B.t.u./hr. input were also announced.

All models are available for use with natural, manufactured, mixed, and liquefied petroleum gases, including LP gas-air mixtures. Controls for all gases are provided as standard equipment.

The manufacturer reports that the line has been newly designed for both commercial and industrial use, and not only for attractiveness but easy accessibility of parts.

Company engineers point out structural changes are not necessary to accommodate the new lightweight heaters.

"A hanger assembly, provided with the unit, can be adjusted to any mounting height by the use of an inexpensive pipe," it was explained.



CUT-AWAY view of new horizontal heat pump manufactured by Lennox Industries, Inc., Marshalltown, Iowa, shows compact construction and advanced design which makes possible flexible installation and noise-free operation.

Lennox Claims Installation Flexibility For New Horizontal Heat Pump Model

MARSHALLTOWN, Iowa — Flexibility in installation is claimed for a horizontal heat pump introduced by Lennox Industries, Inc.

Indoor and outdoor sections of the new horizontal model may be close coupled to form a single package.

"The package may be installed on the flat roof of the residence or commercial building or outside the structure at the foundation line," it was pointed out. "Both sections are finished in dawn gray enamel."

"The indoor section may be installed above a closet, in the attic, in the basement or crawl space of the basementless home. The outdoor section is low enough to place under a window sill."

Addition of an optional, acoustically-lined discharge hood makes possible installation through garage or carport wall.

"Like its vertical counterpart, the Lennox 'Landmark' heat pump, the horizontal model features new coil designs and controls which give cooling capacities equal to conventional air conditioning and a heating function which performs in extremely cold weather."

"The compressor incorporated in the Lennox heat pumps has an oversize motor with refrigerant motor cooler. It operates with condensing temperatures as high as 145° F. and with evaporator temperatures below zero."

Defrosting in the compressor section is controlled by a thermostat which senses both air and refrigerant temperatures and is unaffected by air flow variations.

"Extra coil is provided in the indoor section for the heating function. During the cooling cycle, a portion of the indoor coil is automatically cut off to preserve a high rate of heat removal. In cold weather, the entire face area of the indoor section is activated."

Both indoor and outdoor coils are copper and have 10 aluminum fins per inch.

A "Weather Control Center" provides choice of manual or automatic regulation for varying seasonal requirements and enables the homeowner to run the indoor blower continuously or only when the compressor is operating. In addition, the control center regulates optional strip heater segments when supplementary heating is required.

The new horizontal heat pump is available in versions which range from 3 to 5 tons nominal cooling capacity and from 12,500 to 21,500 B.t.u.h. heating capacity (less strip heaters) at 0° outdoor temperature according to the company.

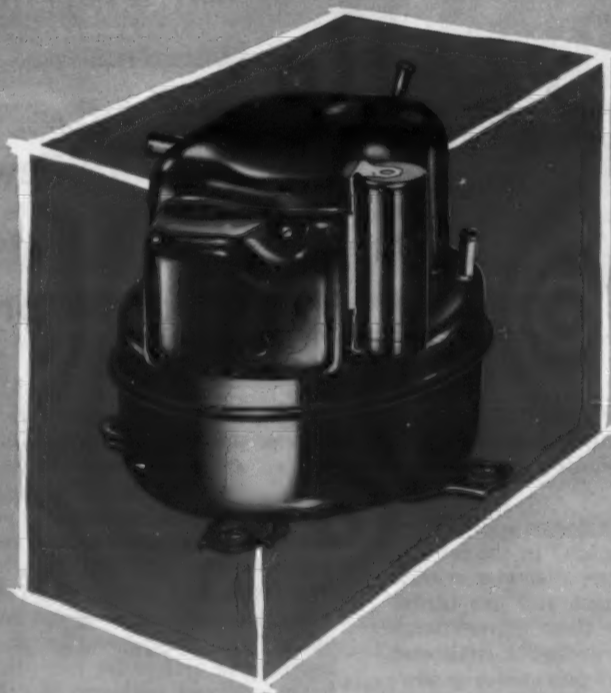
Dimensions are: Indoor sections — height, 24¼-28 in.; width, 48⅞-58⅞ in.; length, 24⅞-29⅞ in. Outdoor sections — height, 24¼ to 28 in.; length, 33⅞ to 37⅞ in.; width, 48⅞ to 58⅞ in.

develops new application flexibility

ROOM AIR CONDITIONER COMPRESSORS

¾ HP and 1 HP MODELS

These new single cylinder, internally spring mounted compressors range in capacity from 8500 BTU to 9,500 BTU. Included are two 7½ amp models, a model for 12 amp, 115 volt operation, and other for 115, 208, or 230 volt units. All of these compressors use F-22, are reduced in size and have high power factor motors.



1, 1½, and 2 HP TWINS

These ten models provide a choice of capacities from 8400 BTU to 23,300 BTU. All are designed for F-22, incorporate high power factor motors, and are externally spring mounted. One 7½ amp-115 volt model and two 12 amp-115 volt compressor are offered in this series. Two models are special 230 volt, 50 cycle compressors, and the balance offer a choice for either 208 or 230 volt, 60 cycle operation.

Refrigeration Industries

COMPANY

West Dearborn, Michigan

MARION, OHIO

TECUMSEH, MICHIGAN



AROUND THE WORLD IN 50 DAYS

"Inside Dope" by GEORGE F. TAUBENECK



(Continued from Page 1, Col. 1)
sels World's Fair. American cigarettes: 76 cents per pack. Hotel rooms: \$14 to \$48 per day. A decent meal: from \$6 to \$18. Taxicab fares: incredible, by American standards. And so on.

This situation may be costing Belgium more ill will than she is creating. . . .

Russian Prowess Magnified

The Russkies are equally guilty of price-gouging at their restaurant. A dollop of caviar, for instance: \$4.80. Pack of long-tailed Russian cigarettes (mostly paper) goes for 97 cents.

But, let's face it: the Russian

pavilion is the biggest, the most overwhelming, and possibly the most impressive to "neutral" visitors—especially "les pay-sane" (country folk).

To enter this enormous glass-steel-aluminum structure you weary-walk up three flights of marble staircase. After you are inside, you are supposed to be awed time after time by what you see. Many people are, obviously.

Huge mining and industrial machinery, complicated electronic devices, Sputnik cutaway models, a simplified typesetting machine (praise be!), plus tiny-scale reproductions of Soviet lunar and polar exploring bases, and enormous photos of Communist factories greet the eye.

There is a "hi-fi" room, next to a television camera trained on passers-by (who see themselves on three receivers). Much enjoyment for all here, and giggles on the television see-yourself show.

Not far from the cutaway-model Sputniks are two Soviet automobiles, shiningly lacquered. One, the Moskvitch, is a prototype of a small Hillman (British) sedan. The other (Zil)—so help us—is an ultra-chromed 1958 Buick Roadmaster limousine (with a front end resembling a 1958 Plymouth).

These two auto models may not be mass produced, but they're real lookers.

To this jaundiced observer the Russian art exhibit was the

best in the Exposition. You see, it was realistic—almost photographic. And that's the sort of "art" everybody can understand and appreciate.

All the oil paintings and water colors portrayed people at work—fishing, building, assembling—save one. And that was a sentimental dandy. Signed by O. M. Zardarian, "Printemps 1956," pictured a lovely girl in a rural scene, doing nothing at all. The luminous colors were reminiscent of the late Coles Phillips.

Imitation Cinerama

Attached to the U.S.S.R. modernist Parthenon is a comfortable movie theater where, for half a buck, you can witness "Our Mighty Nation."

If Lowell Thomas and his Cinerama associates aren't collecting royalties on this production, they should sue (in what court?). Curved screen, three

projectors, two vertical lines separating the image . . . and the same "plot" as the first Cinerama show.

For the roller-coaster Cinerama whinging this film substitutes a wild, careening auto ride through city traffic. In America the driver would have been sentenced to five 30-year terms in prison, to run consecutively.

Then the camera switches to wheat-reaping, aerial jaunts over comparatively uninteresting mountain terrain, mining operations, factory production, and views of people—striving mightily to be happy for the camera—on beaches and playgrounds.

Prior to the dull propaganda finale comes another hair-raising auto ride through mountainous country. Good show for the price. Accompanied, mind you, by a musical soundtrack which included darned good American type jazz—with a real strong-beat. We tried to obtain this soundtrack without success.

As usual, though, the Russkies spoiled the impression they were trying to make on the peasantry. They had souvenirs for sale. And such junk was a scandal to the jaybirds. Dismal leather goods, putrid pottery, scarfs which would be scorned by remote African females. . . .

Again the Communists proved that industrially they must be respected. But in terms of consumer-happiness goods . . . "nyet."

We Should Be

Ashamed, Really

Compared to the Russian exhibit, the airy-fairy American pavilion was a merry-go-round competing with a Ferris Wheel.

Taller and mightier, the Communist Ferris Wheel. . . . More fun and daintier, the U.S.A. exhibit.

As a matter of fact, the latter underplayed its assigned role ("don't be too boastfully conspicuous" apparently was the watchword).

America's pavilion was Snobism in Reverse—like the inheritedwealthy Philadelphia Main Liners who drive beat-up old Ford station wagons to their country clubs.

Architecturally and externally it is superb. As an example of American life, however, it is trivial, and far from complete.

Photographs on Parade

Despite highway robbery-prices, the Brussels exposition affords a quick tour around the world via magnificently enlarged photographs in handsome environments.

Probably never has so much been displayed so triumphantly—photographically, that is—as you'll find in the various national pavilions. Kodak and Gevaert should be proud and happy.

Let's cite:

The Belgian Congo: Somehow the Belgians have avoided strife in their African Colonial Empire. Pictorially (at the Brussels exposition) one can see why.

Progress, slow but sure, toward modernization and sanitation. (Concluded on Page 17, Col. 1)

Reduce Costs By Using New, More Powerful Shaded Pole Motors In Your Appliances



Redmond
TYPE AY TRI-FLUX
SHADED POLE MICROMOTORS

Redmond's New Design Greatly Increases Shaded Pole Motor Application

Now you can reduce costs by using the powerful new Redmond Tri-Flux® shaded pole motor in applications that formerly required more costly general purpose motors.

Redmond's patented Tri-Flux design adds a third flux path with a "reluctance notch" in the leading pole tip making possible a larger diameter shaded pole motor that is more efficient and has higher starting and running torques than conventional shaded pole motors. It is this exclusive Redmond feature that makes your shaded pole motor powerful enough to replace the more costly types you may now be using and which may be over-motoring your product.

The basic AY shaded pole MicroMotor pictured above is available in both 4 and 6-pole designs, ranging through 1/3 horsepower in many applications. It can also be modified readily and economically to fit your exact specifications for both mechanical and fan duty requirements.

The Redmond type AY Tri-Flux shaded pole

motor is a quality product yet it is still the most economical style motor available when properly applied and tailor-made to fit your requirements. Designed and developed by the Redmond Company, millions of these motors are now in operation in a multitude of air-conditioning, refrigeration, heating and ventilating applications where years of trouble-free service and whisper-quiet operation is essential. The Redmond Company has been a specialist in the design and production of shaded pole and fraction horsepower motors for more than a generation and have produced well over 70,000,000 motors during this period and is considered a leader in its field. Redmond motors are constructed with UL and CSA approved materials and methods and you may be assured that production motors will maintain the same high quality-precise specifications found in hand made test samples.

Redmond sales engineers are skilled technicians whose primary function is applying a motor to your production. Call us today to help you with your cost reducing program.

HAVE YOU INVESTIGATED THE LATEST DEVELOPMENTS IN MOTORS?

Redmond engineers want to help you adapt these motors to your specific needs. Contact us at Owosso, Michigan, and we will have the Redmond sales engineer in your district call you at once.



Don't throw
CAUTION *to the*
Winds!



Install the amazing
NEW SPORLAN

See-All

Note the full-view sight glass around the moisture indicator that lets you "see" if the refrigerant charge is too low, or the liquid line is restricted

**TODAY... with the Moisture Indicator that warns you
 before the moisture content of the refrigerant reaches a harmful level!**

It's Foolproof Too! The Sporlan SEE-ALL has but ONE moisture indicator for either Refrigerant 12 or 22 with the color changes the same for BOTH! No chance of a mix-up over refrigerants when You install the SEE-ALL.

Just remove the plastic dust cap and a glance will

tell you... If the indicator is Green, the refrigerant is safely dry. If it is Yellow, it is too wet for safety. But before changing from Green to Yellow the Sporlan SEE-ALL indicator becomes Chartreuse, the caution period that warns you before the refrigerant becomes harmfully wet!

So... Don't throw caution to the winds... Order Sporlan SEE-ALLS from your Wholesaler today, then you can be sure that you will be warned in time to avoid costly freeze-ups and corrosion repairs due to moisture... and remember, if your SEE-ALL shows caution, don't wait until it shows wet... Replace the drier immediately with a Sporlan Catch-All, and watch the SEE-ALL give you the green light!



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Ask your Wholesaler, or write direct for BULLETIN 70-10

SPORLAN VALVE COMPANY

7525 SUSSEX AVENUE

ST. LOUIS 17, MISSOURI

EXPORT DEPT. 85 BROAD STREET, NEW YORK 4, N. Y.

**PLAY IT SAFE!
BUY SPORLAN**

Catch-All FILTER-DRIERS

**with the Original
Molded Porous Core that now offers
Even Greater Drying Capacity!**



**The Famous Sporlan
Molded Porous Catch-All Core...**

**WHAT IT IS...
and WHAT IT DOES!**

It is molded of minute particles of a blend of highly efficient desiccants, which, after complete assembly as a Catch-All, is activated to the highest degree of dryness... a minimum of four hours at over 500° F., then immediately sealed against any loss of activation before installation.

**It dries the refrigerant down to an
extremely low end point... a point
so low that any remaining moisture
is absolutely harmless!**

Its tremendous cylindrical, tri-dimensional filtering area unquestionably offers the only true filtering device capable of filtering out foreign matter with negligible pressure drop. It cannot powder... It cannot pack... and the refrigerant cannot by-pass, or channel around it. Harmful corrosive acids are adsorbed and retained within the core itself!

*For perfectly clean, perfectly dry
refrigeration and air conditioning systems...*

PLAY IT SAFE...

*buy Sporlan Catch-Alls, the perfect filter-drier
with the famous molded porous core
that now gives you even greater drying capacity...
buy Sporlan See-Alls too, the amazing new
moisture-liquid indicator that eliminates
the guess-work and worry on all installations!*

SPORLAN VALVE COMPANY
T V

7525 SUSSEX AVENUE • ST. LOUIS 17, MISSOURI
EXPORT DEPT: 85 BROAD STREET, NEW YORK 4, N. Y.



AROUND THE WORLD IN 50 DAYS
"Inside Dope"
by GEORGE F. TAUBENECK

(Concluded from Page 14, Col. 5)

tion is revealed by enthralling and representative pictographs.

The Czechoslovak Restaurant: Consistently the best food in Brussels, and the best served, combine with superb photographs to make this surprising pavilion quite popular.

The Hungarian "Quick Shop": Wines and fruits and sweets bravely presented in the smallest stall of all. And, as you might guess, superb 35 mm. transparencies.

The French Underground: After you find this place, you're lost for good. Occasional hors d'oeuvres interrupt vino, cognac, champagne, etc., etc. in the longest continuous group of bars in the world. Also, photographs of people at work and play.

P. S.: Skimpy American pavilion exhibits included lonely and unattended, unexplained General Electric, Frigidaire, Kelvinator, Westinghouse, Hotpoint, Philco, and R.C.A.-Whirlpool products.

Without visual or vocal demonstration, these American consumer durable goods were as unintelligible to foreign sight-seers as was the glass coffin containing an American football players' padding supports.

Let's repeat: by trying to avoid expected American "bragadocio," the planners of our American pavilion goofed. It's trivial and inconsequential—even if long lines do form at the soda fountain, the coffee shop, the three cineramas, the Cyclorama, and the free toilets.

RACCA Book Covers Joint Committee Activities Data

CLEVELAND—Ray Kromer, executive vice president of the Refrigeration & Air Conditioning Contractors Association (national), reports the Cleveland office has completed its most recent publication, copies of which have been mailed to local association executives, direct members, and chairmen.

It contains a copy of the original resolution between the United Association and RACCA which established the Joint Program and Training committee between UA and RACCA.

It also contains recommendations and program for local joint committee activity, a sample trust agreement approved by local RACCA and local and national UA attorneys with respect to legality in handling local joint committee program funds, recommended apprenticeship standards as adopted by northeastern region of the Labor Dept. Apprenticeship Div.

Region 5 Wholesalers Will Meet June 23

BEDFORD, Pa.—R. L. Gibbs, general sales manager of Mueller Brass Co., will present the case for manufacturers, while Thom Muir of Refrigeration and Air Conditioning Business will outline wholesaler problems at the summer meeting of Region 5 of Air-Conditioning & Refrigeration Wholesalers here.

The joint manufacturer-wholesaler meeting will be held June 22 through 25 at the Bedford Springs hotel. The Gibbs-Muir discussion will take place at the opening session, Monday morning, June 23, according to the announcement.

Tuesday morning, manufacturers and wholesalers will hear a short talk on credit presented by Charles D. Couch of E. I. du Pont de Nemours & Co., Inc.

and then participate in an open forum discussion on mutual problems.

Wednesday morning, the wholesalers will meet separately.

Sports activities are planned for afternoons with a special program set up for the ladies. The ladies will stage a golf tournament Tuesday morning while the men will hold theirs Tuesday afternoon. A cocktail party, annual banquet, and dancing will follow.

W. E. Kress Resigns

PHILADELPHIA — Resignation of William E. Kress as midwest marketing manager for Philco Corp. was announced by Henry E. Bowes, vice president-marketing.

Kress' decision was prompted by a personal desire to relocate in the southwestern area, Bowes said.

Tom Pendergast Joins Firm Specializing In Compressor Warranty Insurance

ST. LOUIS — Employers Insurance Service, Inc. has announced the appointment of Tom Pendergast of Morral, Ohio as vice president.

A pioneer in mechanical refrigeration and air conditioning, Pendergast began his career in 1922 as chief engineer of Absopure Refrigeration Co., Detroit. When Universal Cooler bought the company in 1931, he became vice president in charge of sales and later in charge of manufacturing. Subsequently, he served as president of Baker Ice Machine Co. and as field application engineer of Tecumseh Products Co.

Employers Insurance Service specializes in five-year compressor warranty insurance for original equipment manufactur-

ers and wholesalers. Pendergast will give his full time to the insured warranty program, particularly in loss reduction, helping manufacturers and service people in their designing, engineering, processing, installing, and servicing practices in the industry, according to Jim Brown, president.

To help reduce losses, Pendergast designed and set up procedures for analyzing and testing hermetic compressors. Airserco of Pittsburgh is now manufacturing a portable tester designed to meet Pendergast's requirements, it was reported.

Pendergast will be attached to the home office in St. Louis but will maintain his residence at Morral, Ohio (Telephone: 5-3930).

For safer, easier equipment cleaning ...



● Cleaning compounds based on Du Pont sulfamic acid are handled dry, until they are dissolved for use.

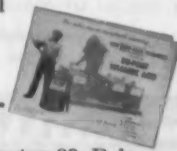
DRY

ACID CLEANERS based on Du Pont sulfamic acid

New cleaning compounds made with sulfamic acid are sold and handled dry—no hazardous liquids to ship or store. Dry, or dissolved in water for use, they create no fumes. Yet these cleaners have all the penetrating power of hydrochloric acid with far less corrosive effect.

Sulfamic acid-based cleaners remove scale and deposits from air-conditioning and ice-making equipment, food-processing vessels, steam boilers, milk evaporators and pasteurizers, marine evaporators and heat exchangers. Cleaning action is fast, thorough.

We'll gladly send you more information on sulfamic acid-based cleaners and the names of formulators who offer these new compounds. Just mail the coupon below.



DU PONT SULFAMIC ACID



BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

E. I. du Pont de Nemours & Co. (Inc.)
Grasselli Chemicals Dept., N2533, Wilmington 98, Del.

Please send me: ☐ sulfamic acid general equipment-cleaning bulletin; ☐ names of formulators offering cleaners based on sulfamic acid.

Name _____

Company _____

Address _____

City _____ State _____

The Consulting Engineer's Column

Aim of this column is to present information of particular and current interest to Consulting Engineers, and those active in application engineering work generally. The editors invite contributions to the column from all who are engaged in such activity.

By A. L. Munson, A. L. Munson & Associates,
Consulting Engineers, St. Louis, Mo.

Rapp's Supermarkets, recently incorporated into the Wrigley Bros. chain (headquarters in Detroit) has been building a number of huge new supermarkets in the St. Louis area. These are usually large one-story buildings with an all-glass front of about 180 ft. They are unusually attractive stores extremely well lighted and appointed.

Fred P. Rapp and his sons feel that a supermarket should give the appearance of a huge show case which will attract customers to their stores just as a well designed, well lighted, and attractively arranged show case does in a downtown department store, or hobby shop.

The supermarket operators are also very particular about their heating and cooling requirements. They want plenty of cooling and adequate heat without anyone being aware of drafts or noise or air movement. They want the system to be simple enough for the store manager to operate by pushing a minimum of buttons. And they want the system to be inexpensive enough that they

can afford to buy it. They are not looking for fancy systems. They are looking for results. This is typical of all supermarket operators.

But Rapp's goes much further than most in providing a comfortable climate. They are extremely reluctant to lose any valuable sales space. And they do not like the appearance of floor mounted packaged units. They want a dignified, good looking, well lighted, comfortable store.

Also preferred is a dark ceiling with a multitude of recessed incandescent spot lights which subdues the lighting, reduces glare, and yet brings out the color and appeal of their products.

The arrangement of their stores created certain problems. The 2,000 sq. ft. of plate glass exposure, the huge light load, and large occupancy, and large fresh air requirements built up a sizeable cooling load. And it was estimated that a full one third of this load was in the first 30 or 40 ft. inside of the show windows.

No Overhead Space for Conventional Ductwork

But there was no overhead space for conventional ductwork. The bar joist ran in the wrong direction and there was no false ceiling below the joists. And ductwork hung below the ceiling would spoil the smooth line of the ceiling. Rime A. Dusard, the architect said, "nothing doing—find another way."

It was essential that an adequate supply of conditioned air be provided to the front of the store where the greatest per sq. ft. load existed. So an under-the-slab Sonoair duct was used, with sheet metal take-offs to a series of low window-sill grilles located along the bottom of the long show window.

The Sonoair duct was buried in a Zonolite insulating concrete mix to a thickness of 6 in., all around, and an effective vapor barrier was provided.

A full third of the total capacity was provided for through this duct arrangement, which was designed to handle the first 35 or 40 ft. of the store.

The balance of the sales area was handled by conventional overhead ductwork which was fitted into the available spaces above the ceiling. In some cases a single main overhead duct was possible, but in other cases because of space limitations created by the overhead steel work, two overhead ducts were required from one side of the store to the other.

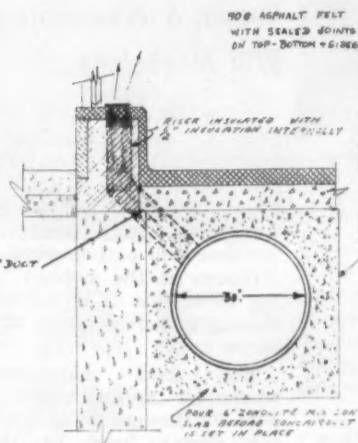
Ceiling Diffusers Used Near Open Top Cases

The rear of the store contained a large area of open top frozen food cases where very low air velocities were essential. So in these areas ceiling diffusers were used to handle the large volumes of air without ruffling the air in the frozen food cases.

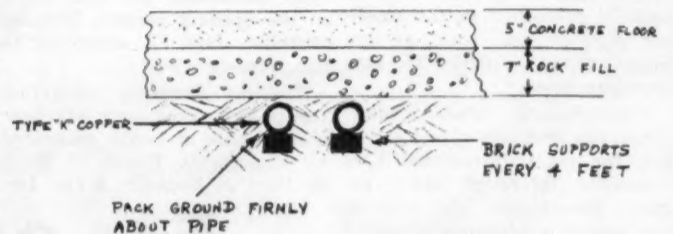
Return air was taken through the wall near the ceiling where most convenient to the equipment, and where large air movements would not disturb frozen food cases.

In the installation, three General Electric packaged 20-ton units were used and located out-

(Concluded on next page)

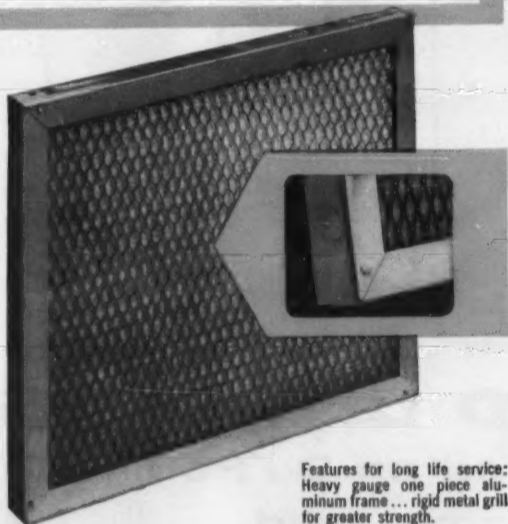


This drawing (which is not to scale) shows the manner in which an under-the-slab Sonoair duct was used in a supermarket installation. Sheet metal take-offs carried the conditioned air to a series of low window-sill grilles located along the bottom of a long show window.



Some copper tubing lines were also run underground, and the above shows the manner in which this was done.

You make more profit
per filter sale with
Skuttle-Aire
permanent filters!



Features for long life service:
Heavy gauge one piece aluminum frame... rigid metal grill for greater strength.

Here are the reasons why you get more with Skuttle-Aire:

- because** they're permanent... built for lifetime wear.
- because** they're cleaned in a jiffy when dust and dirt particles gather, simply remove, clean with plain water and replace... that's all there is to it.
- because** they're maintenance-free... nothing to wear or replace, never need oiling.
- because** they're filled with new-type filtering material... multiple layers of specially woven plastic filaments with permanent electrostatic qualities, making it the ideal dust and dirt collecting agent.

SKUTTLE-AIRE permanent filters are available in all sizes for furnaces, central air conditioning systems and room coolers.

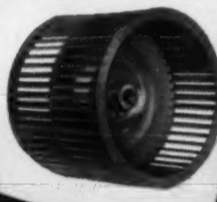
Write today for complete information on Skuttle's quality products that give you more profitable sales.

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MILFORD, MICHIGAN

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NEW!



Young Radiator Company

LEADING MANUFACTURERS OF
HEATING, COOLING AND
AIR CONDITIONING EQUIPMENT
uses

**REVCOR'S NEW
DOUBLE INLET BLASTAIRE
BLOWER WHEELS
IN THEIR ROOMAIRE CONDITIONERS**

because they... PROVIDE MORE AIR VOLUME PER SIZE OF WHEEL!

REVCOR SINGLE AND DOUBLE INLET BLASTAIRE BLOWER WHEELS ARE USED BY OVER 60% OF THE ROOM AIR CONDITIONER MANUFACTURERS!

Write For Technical Details

Revcor, INC. 251 EDWARDS STREET
CARPENTERSVILLE, ILLINOIS

Edwards Airvec Supplies 90 Tons Of Air Conditioning To New Bowling Center*

EDWARDS Airvec Condenser Utilizes Convection Principle. Eliminates Noise, Motors, Maintenance, Structural Problems.

Heat rising from the horizontal condenser creates a chimney-like draft that continues to draw fresh air through the unit. Manufactured in 2, 3, 5, and 7 1/2 ton basic sections, which then can be assembled in multi-sections for unlimited capacities up to hundreds of tons.

This principle eliminates: Noise, Motors, Wiring, Maintenance, Operating Problems. WRITE Airvec Dept.

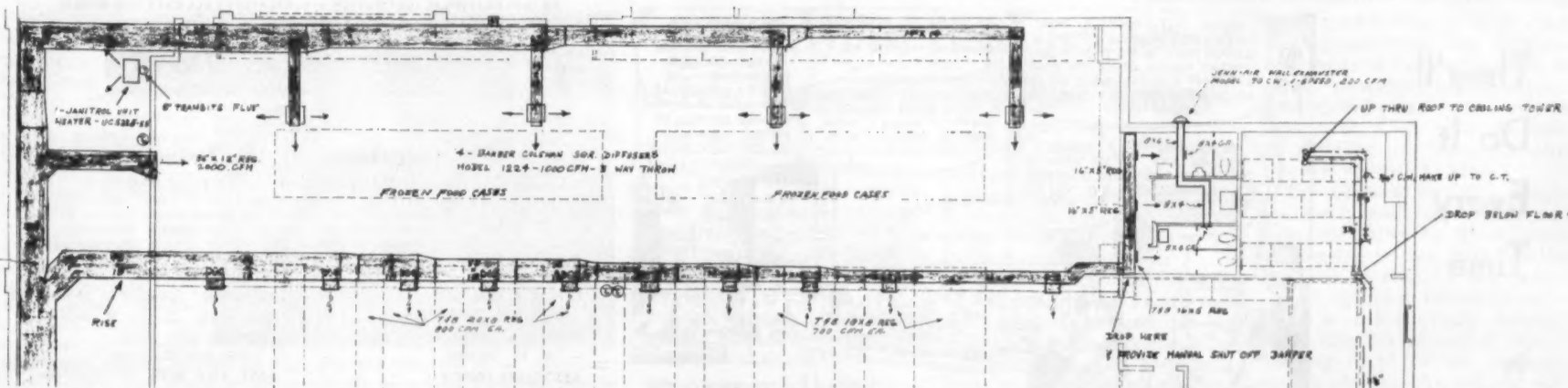
Edwards Engineering Corp. Manufacturers Agents Inquiries Invited.

CO - AXIAL FREON CONDENSERS

- COST REDUCED 30% to 40%
- CONDENSER WATER REDUCED 35%
- Refrigerant Charge Reduced
- Stabilizes Capillary Performance
- Smaller Cooling Towers Required
- Shipping Weight Reduced
- Many Shapes and Sizes Available
- Sea Water Models Available

EDWARDS ENGINEERING CORP.
103 ALEXANDER AVENUE • POMPTON PLAINS, NEW JERSEY

*Installation at the T-Bowl Bowling Lanes, Hamburg Turnpike, Wayne, New Jersey



Above drawing shows arrangement of overhead ducts in the rear of the supermarket. In the frozen food department, overhead diffusers handling large volumes of air at low velocities were used so that the air in the low temperature display cases would not be affected. Ductwork in the foreground handled part of main display area.

(Concluded from preceding page) side the sales area, with Janitrol duct heaters being used for heating. Fan operation will be continuous and the same quantities of air will be used for heating as for cooling, to maintain the same air distribution pattern.

Where the c.f.m. capacity of the duct heaters was less than that being circulated, a face and by-pass arrangement was used to modulate leaving air temperatures and to prevent too high an air velocity through the heaters.

The heaters themselves have step-matic type operation, so that except in very mild weather, at least one heater will be in operation, to prevent too cold an air discharge.

Cooling Tower Located On Rear Roof

Cooling tower was located on the rear roof above the refrigeration machine room where it will be out of sight, and thus the condenser water pump could be located conveniently in the compressor room for easy maintenance.

Since this caused the tower to be some distance away, pressure switches were installed in the water line to each condenser to prevent the compressor from operating without proper condenser water circulation. This saved wiring an electrical interlock all the way back to the tower and pump.

The sequence of operation was such that a single push-button station started the cooling tower fan; the extra set of contacts on this starter closed the circuit through the condenser water pump starter, starting the pump.

The increase of water pressure at the condenser inlets caused the individual pressure switches to close, thus closing the starting circuit of the compressors—subject to the demands of the thermostat, and the safety limitations of the standard pressure switches in the units. Thus a simple but safe interlock was obtained with a minimum of expense, and a minimum of wiring.

On another job (Natural Bridge and Avalon), two 30-hp. Carrier compressors operated on a two-circuit direct expansion fan-coil unit, with a two-circuit evaporative condenser located in the same mezzanine machine

room. The discharge duct from the fan-coil unit was divided into three separate ducts going

through three separate sets of duct heaters, to provide flexibility without multi-zoning.

Fred P. Rapp, Jr. went out of his way to compliment us on these jobs which were

bought for approximately \$1.30 per sq. ft. complete with ventilation and exhaust.

the

NEW McQuay
ZEROFROST
AUTOMATIC HOT GAS DEFOST SYSTEM

*the ideal system—
and the price is right*



McQUAY UNIT COOLER
A new low temperature unit cooler with low pressure drop, built-in heat exchanger and drain pan de-icer. Available in eight sizes, 3000 to 32,000 Btu/hr.



McQUAY REVP
Automatically controlled heat reservoir REVP re-evaporates condensed liquid for quick and positive coil de-icing. Solenoid valve, actuated by timer, diverts hot gas from compressor discharge through REVP.



UNIT COOLER



REVP



SOLENOID VALVE



TIMER

= **McQuay ZEROFROST SYSTEM**



McQuay INC.



AIR CONDITIONING
HEATING
REFRIGERATION

AN INTERNATIONAL INSTITUTION • SUBSCRIBERS ALL OVER THE WORLD

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**WEISS CLEARS UP A POINT IN RSES TALK**

American Furnace Co.
1300 Hampton Ave.
St. Louis 10, Mo.

Editor:

The writer wishes to take this opportunity to thank you for publishing the condensed version of my talk, to the RSES meeting held at Minneapolis.

There is a possibility that I did not make myself too clear in one of the statements made in this version and that is the amount of air conditioning to be added when a charcoal grill is encountered. I believe you

quoted it as one ton of additional refrigeration for each 4 sq. ft. of "chimney" area. I meant this to be one ton of refrigeration to be added for each 4 sq. ft. of "grill" area. If the reader would construe this chimney area as hood area and not actual vent size, it would probably be satisfactory.

I don't know how the name, E. Weiss, got into the picture, but you can see from the signature that that too was wrong.

WALTER WEISS,
Product Application Engineer

SEEKS SUPPLIER OF SMALL FREEZING PLANT

A. y. F. Wiese S.A.
Wiese Building
Lima, Peru

Editor:

We shall be very grateful if you could be kind enough to contact one of your advertisers specializing in food freezers so that we may get information and prices on low temperature cabinets for freezing lobster.

One of our customers is asking us for a small freezing plant to cool a load of about 1,000

lbs. of lobster tails per day up to a temperature of -40° F.

The cabinets offered by other companies consist of two sections: the lower one where the condensing unit is located, and the upper section made up of quick freezing plates.

We have been unable to find an economic solution, as the use of a two stage compressor or a compressor and booster compressor proves costly.

EDUARDO LAROSA

Handy Way to Subscribe**To See the Industry In Action EVERY WEEK**

Keep up-to-date on what's going on in your industry. You'll see action weekly in AIR CONDITIONING & REFRIGERATION NEWS. Covers latest news and gives you top how-to-do-it reports on residential, commercial, and industrial air conditioning, heating, and refrigeration for contractors, dealers, consulting engineers, distributors, servicemen, and manufacturers. Read the industry's only newspaper every week—you'll profit by it—only \$6.00 per year, 52 issues (U.S. and Canada). Foreign: \$10 per year.

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Pre-Selling Via Television Loses Out To Personal Salesmanship and Service

AN EXPENSIVE national-scale breakdown study of the basic character of air conditioning and refrigeration retailers turns out to be a "breaking down" indeed, we learn from friends in the General Blank Corp. (actual corporate name withheld on request).

Each year it becomes more and more difficult to distinguish between a specialty dealer, a department store, a plumbing or heating contractor, a discount house, a drugstore (or furniture or hardware or jewelry shop), and a variety chain, this survey reveals.

Nevertheless, homogenization of our nation's retailing structure is occurring gradually, even if painfully.

Each of the above-mentioned retail adversaries is exploring the others' territory, to the discomfort of many and alarm of some. Especially is this true of mechanical equipment for homes.

Some specialty dealers are adopting supermarket or department store techniques by moving out into suburban shopping centers. They are branching out into outlying territory "where the people are."

Too many home equipment specialists, however, doggedly are staying in formerly easy-to-reach locations—or even, as in the case of air conditioning contractors—in obscure alleyways ("the better mouse-trap" in reverse).

Obviously both this hole-in-the-wall and hole-in-the-head stubbornness isn't helping qualified contractors to capture a lion's share of the market.

Their technical skills and personally-assumed responsibility deserves this business. Yet—they're stewing in their own souring juices because they don't adapt.

Yeasting this ferment is a search by progressive manufacturers for more attractive and efficient distribution methods for merchandising their jazzed-up products.

Many producers, for instance, are dabbling in expensive air freight as a method of cutting down warehousing costs—and to expand customer services.

Others are hiring "mechanical brains" to cut distribution costs through mathematical analyses of retail orders.

In turn, this helps them schedule factory output realistically, and thus holds inventories to economical levels.

It is curious that, with rising technical progress, the road from producer to the final customer has not been straightened out sufficiently—or at least satisfactorily—by any of the above foreshortened methods.

Obviously, therefore, distribution still is the major area for business research. (Purpose: reduce marketing costs and increase profits.)

Business researchers haven't been idle in this connection. Currently there is a change in thinking from the old concept of high volume at any cost to the newer concept of VELOCITY (rapid turnover, better profits through selective selling) on the part of management and the business consultants who advise executives.

Personal Salesmanship on the part of dealers and contractors still is the key to profitable volume, it seems. Personality Selling can't be codified, and it is discouraged by loose franchising policies.

Obviously this concept embraces more and better advertising, and especially more helpful advertising to retailers. Business publication advertising, therefore, could grow astonishingly from this challenge.

Efficient, low-cost selling shouldn't be confused with price-emphasis merchandising, it should be emphasized at this point.

Profitable distribution and mass marketing can be achieved by more favorable methods.

How? A return to creativeness and imagination on the part of marketers and advertisers seems to be indicated.

How much can either pre-sell via the television screen?

How much does profitable sales volume depend on Personal Salesmanship and Personal Service?

Who will service brand-name products—makers or sellers?

SERVICE will be ultra-important, we predict, and pre-selling via national TV advertising on an ultra-costly scale may drop out of the picture. It just isn't working well in terms of customer satisfaction.

In the long run consumers will determine the answer. And consumers like to deal with dealers whom they like, and who service well. Pre-selling has nothing to do with this picture.

Our bet is placed on the dealer or contractor who is SOLD himself on providing good Service.

WHAT'S in a check-out of Rheemaire installation is discussed by Ray Kendall (left), Rheem Home Products Div., with Bud Berberich and Al Wagner of B & E Heating, Downers Grove, Ill., at a Rheemaire installation and service school held at Acme Furnace Fittings Co., Chicago. Meters, to which Kendall is calling attention, show voltage and amperage draw of the compressor. Direct reading thermometer shows suction line temperature, while pressure gauges give pressure readings on high side and low side of the compressor. Plastic windows show interior of condensing unit, as well as a close-up view of the Rheem "Air Film" condenser in operation.



Parcel Air System Claims Fast Service At Low Rates With Pre-Paid Stamps

LOS ANGELES—Demand for fast and economical transportation of goods between manufacturers and suppliers and their customers is being fulfilled with the inauguration of ParcelAir System, a new method of shipping by air providing one to three-day delivery to any town in the U. S. at rates comparable to surface transportation.

This was announced by Al Krause, president of American Shippers, Inc., air freight forwarder and parent company of the new service which went into operation recently.

ParcelAir, already carrying more than 1,500 shipments per day, combines air transportation with truck or parcel post delivery to any point in the

country, Krause pointed out.

ParcelAir service began simultaneously in New York City, Boston, Chicago, and Los Angeles, with San Francisco and other points to open soon.

Comparing the various types of transportation and their rates, Krause pointed out that a 20-lb. package shipped by air express from Los Angeles to New York, with \$50 insurance coverage, would cost \$17.08. By air freight, he said, it would cost \$19.70; by air parcel post, \$16.20; and by ParcelAir, only \$4.90. Ground transportation by rail express was quoted at \$5.42, with straight parcel post, \$3.95.

Key to the simplicity and economy of the ParcelAir operation, Krause said, is the use

of ParcelAir stamps to pre-pay and predetermine the door-to-door costs of the new service. A chart provided each shipper lists state-to-state rates, rather than zone rates, with the cost of shipping the same to any locality within the state.

The preparation of a single shipper's manifest, which accommodates up to 20 separate shipments, is the only record required to ship by ParcelAir.

Although each ParcelAir shipment is automatically insured up to \$50, Krause stated, insurance up to \$1,500 per package can be obtained by affixing additional stamps at the rate of \$15 cents per \$100 coverage.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich. Only 25¢ each.

Distributors' Headquarters Chosen as Location of Rheemaire Service Schools

CHICAGO—Training in refrigeration and air conditioning installation and service—without the expense of travel to and from a manufacturer's plant—is the keynote of the Rheemaire training school program for 1958, according to the Home Products Div. of Rheem Mfg. Co.

Each of the division's four regional sales headquarters at Sparrows Point, Md., Chicago, Houston, and South Gate, Calif., is conducting Rheemaire schools in their respective territories. Plan of the school is the same in all territories.

Heart of the school curriculum is a Rheemaire demonstrator unit developed in the Rheem air conditioning laboratories. It is a complete system, with gauges and meters installed throughout. Thus, the instructor can show just what is happening in any part of the Rheemaire central air conditioning system.

He is able to operate 12 different switches to simulate a wide variety of system faults that can occur in any air conditioner. In this manner the installers and servicemen are trained to recognize what may be wrong and to rectify the trouble immediately.

The Rheem plan for troubleshooting a system is based entirely on an understanding of sound procedures of checking out an installation for proper operation as soon as it is connected and ready for cooling. In placing this emphasis on operational check-out, Rheem expects more trouble-free installations to result.

Schools will be held throughout the cooling season in the headquarters of Rheemaire distributors. Air conditioning con-

tractors are encouraged to enroll their installation and service personnel.

For your REFRIGERATION, AIR CONDITIONING and HEATING UNIT NEEDS . . .



Specify Quality-Controlled PHELPS DODGE COPPER TUBE!

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- Quality-controlled throughout manufacture to assure finest tube properties.
- Tubes degreased and capped, or dehydrated and sealed, if required.
- Deliveries geared to your production requirements.

James Witter Named Buffalo ASRE Head

BUFFALO—James Witter of Mollenberg-Betz Machine Co. has been elected chairman of the Buffalo Section, American Society of Refrigerating Engineers. He succeeds Kenneth Champagne of Davis Refrigeration Co., Inc.

Other new officers are: Rodger Schumacher, Worthington Corp., first vice chairman; Alfred Little, Fedders-Quigan Corp., second vice chairman; Richard Bartsch, Davis Refrigeration Co., Inc., secretary; Joseph Grieser, B & G Refrigeration, treasurer.

Fast for Lasting Quality from Mine to Market!



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In 'Workshop Panel'

Wholesalers See Training of Dealers, Salesmen as Key to Future Existence

By C. Dale Mericle

ATLANTA — How improved training of dealers and salesmen can increase overall sales was emphasized in a "workshop panel" staged during the 11th annual spring convention of National Heating & Airconditioning Wholesalers here.

That wholesalers must strive to boost dealer sales so they won't be by-passed in distribution channels was the underlying and urgent theme of this session, which heard from eight manufacturer and wholesaler panelists.

Increase Sales Per Man

"Business is good," reassured Ralph Bell, Richmond, Ind., wholesaler, who believes "increasing sales per salesman is the easiest thing we in management have to do. We can't go out and pick up 'fireballs,' but we can train our own salesmen."

Noting that each order may be smaller nowadays, "we simply have to write more orders," Bell commented. To do this, Bell said, requires an optimistic attitude, analysis of territory, better use of time, and greater knowledge of product and sales methods.

"If you analyze your territories, you'll find a lot more prospects than you think exist," he declared.

"Time is the salesman's greatest asset, but it's also the most abused. The best selling times are 7:30 to 8:30 a.m., 11:30 to 1, and after 5 p.m., so see that your salesmen don't overlook these opportunities," Bell urged.

Bell also bemoaned that both salesmen and managers spend too much time watching television at night and not enough time studying. A good salesman today is competing with fewer salesmen than ever before in history."

80% of Your Sales Are Made by 20% of Your Men

Commenting that "80% of your sales are being made by 20% of your salesmen," George Sprick, New Haven, Conn., wholesaler said, "there is no universal remedy for this. There's no one big thing but a series of little things."

"Your best salesmen are developed from non-selling fields. The successful salesman," Sprick contends, "doesn't depend on sales gimmicks. He has to be a sales consultant."

On the subject of direct selling, Walter Burnside, wholesaler from Niles, Ohio, ques-

tioned whether the wholesaler's "real competition" was the manufacturer who openly went direct to the dealer or "the great many manufacturers who go direct to the building contractor while selling the wholesaler at the same time." Burnside believes the latter manufacturers are "doing great harm, breaking down morale, and knocking the profit out of the picture."

The wholesaler, in Burnside's opinion, can offer personal and local aids that the manufacturer cannot.

That the final cost to the consumer will not in itself determine the ultimate pattern of

distribution was stressed by Mel Carnahan of Penn Controls, who declared that "the average homeowner doesn't want something just because it's cheap; he wants it to be a little better than his neighbor's."

"You wholesalers have the best chance of winning in this distribution race, but the manufacturer, wholesaler, or dealer cannot solve the industry's problems by themselves," he said.

"The manufacturer must furnish quality products at a fair price and create acceptance of these products through national advertising. He must also supply sales and service helps. The

wholesaler has to pass along these helps to the dealers who take final responsibility."

"People are not buying on price alone," also pointed out C. W. Millsom of Perfection Industries Div., Hupp Corp., who revealed that "sales of our custom deluxe units were 60% of our shipments in the first quarter compared to only 10% three years ago."

Millsom, whose firm does go through wholesalers, explained that the manufacturer is responsible for national advertising but that the wholesaler must do local advertising followed up by direct mail sent to a good list.

"Show prospects how they can modernize not only their heating system but the whole basement as well, and when you're selling add-on cooling, you can sell a replacement furnace too in many instances," suggested Millsom.

Peoria wholesaler Frank Meh-

rings, former manufacturing executive, commented that "we're beginning to wonder about continuing with furnaces. We're doing a lot of business in controls, thermostats, and even humidifiers—the \$100 to \$150 kind."

Sales Training Ideas

Specific suggestions on sales training were offered by panelist A. R. Rees of a Minneapolis wholesaling firm, who listed these five basic techniques: on-the-job training, self-training, work clinics, conferences, and sales meetings.

"With on-the-job training if the counsellor himself knows how to sell, the salesman will learn how," Rees said. "I'd prefer, however, to send the trainee out with more than just one man."

"Have you encouraged your men to take self-training courses in night school? You could have him use a tape recorder so he

The LENNOX perfected

The secret is in the simplicity and soundness of the controls

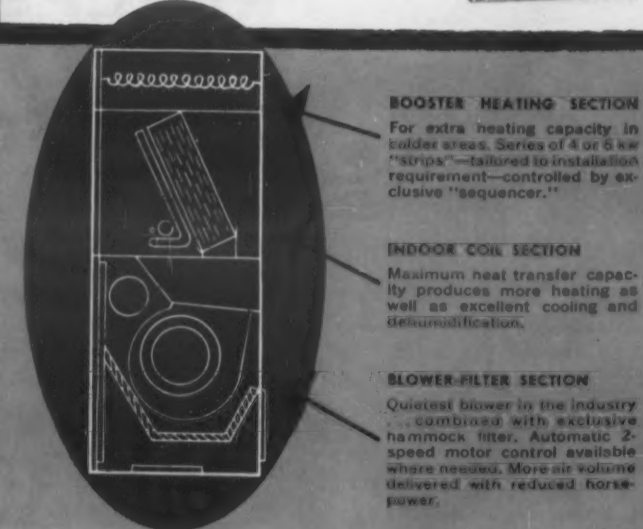
Take the defrost control, for example. It's positive and foolproof—operates on temperature differential instead of complicated air switches or timing devices. It incorporates a positive simple source for sensing frost and for turning the heat pump back on when frost has been eliminated.

The simple and exclusive Lennox "sequencer" control for the resistance strip heaters positively paces the starts of each 4 or 6 kw strip. "Sequencer" prevents simultaneous electric load caused by compressor and heat strip starting at the same time.

The compressor is not just a standard unit with reversing valves. Compressor as well as both indoor and outdoor coils are of special design for heat pump work. Your assurance of longest practical compressor life and minimum service problems.

These are a few of the features that enable Lennox to produce the highest C.O.P.*—higher than any other prominent make on the market!

* Coefficient of Performance: heat output per input watt.



BOOSTER HEATING SECTION
For extra heating capacity in colder areas. Series of 4 or 6 kw "strips"—tailored to installation requirement—controlled by exclusive "sequencer."

INDOOR COIL SECTION
Maximum heat transfer capacity produces more heating as well as excellent cooling and dehumidification.

BLOWER-FILTER SECTION
Quietest blower in the industry... combined with exclusive hammock filter. Automatic 2-speed motor control available where needed. More air volume delivered with reduced horsepower.

ALSO AVAILABLE IN DOWN-FLOW AND HORIZONTAL FLOW MODELS

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could check on, and improve, his own sales delivery. Subscribe to trade magazines for him," Rees advised, "and point out the key articles and key points to him."

"You've got to use salesmanship to sell salesmanship," Rees emphasized.

"Work clinics will help the salesman see for himself the advantages of the products he represents and thus permit him to sell better."

"The conference, which is a guided discussion, helps solve sales problems," Rees declared. Salesmen learn better and they like it, possibly because they see that others have the same problems. I feel that the conference technique is best.

"The general sales meeting, if you have the proper talent, is ideal for presenting a new product or a new program, but if it's used without the four other sales training techniques, it will be short-lived," Rees opined.

"The person who teaches dealers how to sell must know how to sell, but he also must know how to teach, so your best qualified man may not be your best salesman, but he should be your best teacher," advised Henry Rossell, Jr., of American Radiator & Standard Sanitary Corp.

"By sales training I don't mean product training," Rossell also explained. "If your dealers are any distance from you, take the sales training meetings to them. Hold it to two hours at the most, but make every minute fruitful. The best times are in the evenings of a Monday, Tuesday, or Wednesday."

"The average dealer doesn't know what makes people buy. He must know how to say the words that are attractive," Rossell said.

"Don't be discouraged," he also said, "when people drop out of courses. Those that stick will be the best ones."

NWAHACA's New 'Technical Data Book' Designed As Aid To Build Manuals

CLEVELAND—"A book with which to build manuals" is the way the National Warm Air Heating & Air Conditioning Association describes its newly-published *Technical Data Book*.

"Here is a manual which relatively few people in the industry will ever use. But it will have a lasting effect on those manuals which they will read and use and the systems which they will design and install according to these manuals," stated George Boeddener, NWAHACA managing director.

Boeddener indicated that this manual was published specifically for the purpose of providing an authentic and inclusive technical basis on which to establish design procedures in future editions of the association's

manuals on central warm air heating and cooling system design and installation. In addition, this manual can be used by those manufacturers who publish their own design procedures.

The *Technical Data Book* contains data compiled from many sources. Parts of the information are based upon an association-sponsored research project at the University of Minnesota and a complete literature survey conducted at Michigan State university. Additional information, provided by the association's research staff at the University of Illinois, as well as many hours of literature review by the association's Technical Data Committee, also serves as background information on which the book has been built.

tion on which the book has been built.

The publication will always be in a state of growth as dictated by the industry's need for more specific technical information, according to NWAHACA. It is the intent of the association, through the Technical Data Committee, to include additional information as rapidly as research studies and test work are completed.

The first edition contains data on friction losses in straight ducts, pressure losses in elbows, pressure losses in take-off fittings and boot-diffuser combinations and heat-transfer in ducts. It also demonstrates how this information can be applied in the setting up of a design procedure for any ducted air system—heating or cooling.

Included with this book is a brand-new friction chart which has been developed around studies sponsored by the association at the University of Minnesota. This chart gives pressure loss curves for ducts ranging from 3½ in. up to 8 in. in diameter.

"In general, the Minnesota studies showed very close agreement with the ASHAE friction chart for the longer diameter ducts," it was stated. "But for smaller diameter ducts, these curves show up to 10% less pressure loss than is shown on the ASHAE chart."

A convenient size copy of this friction chart has been inserted in an envelope inside the back cover of the new book. On the reverse side of the chart are shown curves of air temperature drop in uninsulated heating ducts, and air temperature rise in insulated cooling ducts.

Application engineers and system development engineers interested in learning more information about this new *Technical Data Book* are instructed to write to National Warm Air Heating & Air Conditioning Association, 640 Engineers Bldg., Cleveland 14, Ohio.

General Filters Offers Free Humidifier for Every 12 Dealer Sells

NOVI, Mich.—A new merchandising program on its General 800 humidifier has been announced by General Filters, Inc. here. The program started in May and runs through July.

For every 12 General 800 humidifier warranty cards that the dealer mails to the company before July 31, 1958, the company will mail him a free humidifier.

According to Mrs. Grace Redner, president, this program is designed to give dealers an incentive to try the new General 800 humidifier during their slow season. The company will keep all the records.

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heat pumps are the result of years of research. There was no attempt to market it until the problems were eliminated which had been inherent in heat pumps before.

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FOR MORE INFORMATION ON THE PRODUCTS DESCRIBED ON THIS PAGE

Write Directly to the Company—at the Address Given in the News Item

Gaffers & Sattler Introduces 5 Models

New additions to the Gaffers & Sattler heating and air conditioning line—an air-cooled 3-ton self-contained air conditioning unit, a 4-hp. condensing unit, and three forced air furnaces—have been announced by Utility Appliance Corp., Dept. AC&RN, 4851 S. Alameda St., Los Angeles.

Designated as model 3TPC, the 3-ton packaged air conditioner is designed for light commercial and residential installations. It can handle an unusually large volume of both condensing and conditioned air and operates in ambient temperatures up to 130° F. without interruption, according to the



THREE-ton air-cooled packaged air conditioner.

announcement by the company.

Used with G & S 5TD or 5TS evaporator, the 4-hp. condensing unit—model 4T—has a reported capacity of 48,000 B.t.u.h. at ARI standard conditions in combination with AC-140H, AC-140 FAF, or AC-160 FAF furnace units. With these same furnaces, but with a 3 TD or 3TS evaporator, it is rated at 43,000 B.t.u.h. Used with the 3TD or 3TS evaporator and the AC-86FDF to AC-120 FDF furnaces, its capacity operating at

ARI standard conditions is 41,250 B.t.u.h.

Two forced air furnaces equipped for air conditioning are especially designed for climates like the arid and semi-arid regions of the southwest U. S. that have moderate heating but heavy cooling requirements. The models, AC75FDF-3 and AC86FDF-3, have a heat input of 75 and 86 thousand B.t.u., respectively, and will handle 1,250 c.f.m. against 0.5 W/C, external to the furnace, when equipped with two-speed ½-hp. motors, the company said. With ½-hp. motors, they deliver 1,450 c.f.m.

Third new furnace is a deluxe unit, model 47FDF, for multiple unit dwellings. It is said to feature low noise level blower and heat input more closely tailored to requirements—47,000 B.t.u. from single heat exchanger. Furnace is manufactured in 14-in.-wide casings to permit substitution of oversized blower and motor if apartment owner wishes to add summer air conditioning, up to 2-ton capacity.

Air Conditioning & Refrigeration News, June 16, 1958

Air-Cooled Condensing Unit Offers Simplicity



also serve to conceal and protect field piping, the company said. All routine servicing can be done from the front of the unit, it was pointed out. All internal parts are shielded from moisture.

Listed as standard equipment are a combination "Super Dry-Eye" sightglass and moisture indicator; exclusive service valve arrangement that simplifies field hookup, evacuation and charging; new filter-drier and heating-cooling control panel wired for automatic operation of the furnace blower. Condenser coil is located across the entire top of the unit and is protected by a heavy steel grating.

The "Polar-Prince," a new air-cooled condensing unit, is designed for "simplicity of installation and service, efficient operation, and trim outward appearance," according to the manufacturer, the Coleman Co., Inc., Dept. AC&RN, 250 N. St. Francis, Wichita 1, Kan.

Initial production includes both 2 and 3-hp. models with rated capacities of 23,000 and 35,500 B.t.u.h. respectively.

Steel legs, attached at the factory, simplify mounting, protect the casing from exposure to surface water and condensation, and



For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Only 25¢ each.

1 EASY-FLO preform ring is slid over header tubes.



2 Operator fluxes bank of assemblies prior to heating.



3 Assembly is heated by gas-air burners; heating time: 50 seconds. Note capillary action of alloy; thorough penetration makes strong, leakproof joint.



4 Components of header box; ring is replaced.



5 Header box under heat; time: 46 seconds.



6 Brazed unit. Note neat, clean fillet around base of tube fitting.

Embassy Steel Products Cut Unit Labor Cost 50 Per Cent with Handy & Harman Silver Brazing



START WITH BULLETIN 20

It tells you why and how high speed, strength and economy are inherent in silver alloy brazing. Gives information on joint design and brazing methods. A copy is yours for the asking.

Before Handy & Harman Silver Alloy Brazing came into Embassy Steel Products' production picture, these convactor radiators were welded. Now, they are brazed with EASY-FLO 35 using gas-air heat, and unit labor cost has been cut by 50 per cent. This includes cleaning, fluxing and assembling. Not bad, eh?

Components involved in this big saving are cold-rolled steel header plates that are brazed to fin tubes and cold-rolled steel header boxes that are brazed to steel fittings. Both of these convactor assemblies are used in residential heating units.

Preformed EASY-FLO .047 wire (.015 ID) is used for brazing the header plate and fins. Photographs describe the joining steps. Each assembly goes through a 50-second heating cycle.

The header box is made in three sizes—depending on the size of the coil assembly it fits. Average heating time for any size is 46 seconds. Two sizes of EASY-FLO are used: .047 and .062 wire. Switching from one size to another involves no change in assembly or heating setup. Add this to brazing's

long list of production benefits and subtract it from production costs.

If all we had to talk about in this case was the reduction in production time because of brazing, we'd still have a strong story to tell. You'll notice that we've said nothing about joint strength, alloy cost, corrosion resistance, ductility and so on. We can, and if you'd like to know how these benefits can apply to what you're joining right now, all you have to do is ask us. We'll be happy to tell you.

Your No. 1 SOURCE OF SUPPLY AND AUTHORITY ON BRAZING ALLOYS

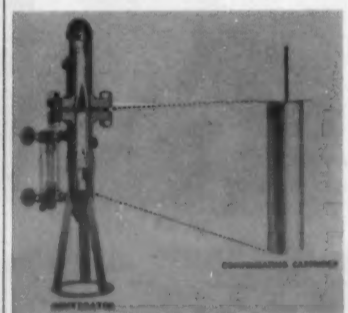
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Juice Dispenser Takes Little Counter Space

Recently announced is the introduction of a newly designed, fully-automated juice dispenser, known as the "Economy Waterfall" model 901, by C.T.C. Mfg. Corp., Dept. AC&RN, 11936 Valerio St., N. Hollywood, Calif.

This unit takes up a minimum of counter space, requires small capital outlay, and has maximum eye appeal for large volume spur-of-the-moment sales, it is claimed.

With a base diameter of 16½ in., the unit stands 26 in. high. The 5½-gal. plexiglas bowl presents a display of color as the juice gushes up through a center tube, hits the dome in an umbrella-effect, and shimmers down the sides to the liquid level.

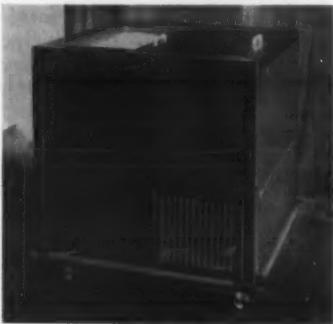


Dehydration Unit Features Economy

A new dehydration unit which makes possible, economically, dew-points of -150° F. and 5-micron filtration of air, gas, or liquids, has been introduced by Dehydrators, Inc., Dept. AC&RN, P.O. Box 7359, Tulsa 14, Okla.

Phillip J. Hill, president of the newly-formed firm, claims the new dehydrators will remove 1 lb. of water for as little as seven cents. The new line of dehydrators range in size from 2 to 8 in. in diameter.

Hill stated that the water-soluble chemical desiccant in the exclusive compensating cartridge is under constant spring compression. As this chemical dissipates on water contact, the spring adjusts toward the point of contact, eliminating voids and assures.

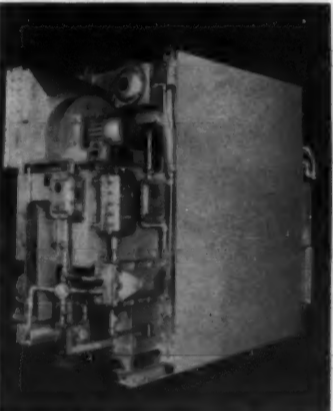


Milk Cooler Maintains Constant Level

A constant level milk cooler equipped with elevators that maintain a uniform level of contents at 6½ in. or less from the top is introduced by Shelley Mfg. Co., Dept. AC&RN, 3233 N. W. 38th St., Miami 42, Fla.

Built in four sizes from 32 to 68 in. in length, all models are available for stationary installation or on casters. With self-contained compressor, they refrigerate through cold plate partitions 12 in. apart that extend down 15 in. into the cabinet.

Containers from ½ pt. to quart are handled. They rest on aluminum divider trays attached to the spring operated elevators. Exteriors are stainless steel or aluminum, while interiors are stainless steel or galvanized.



Space Dryer Removes Up To 40 Lbs. per Hr.

Largest in its line of commercial and industrial space dryers, a new dehumidifier, model 1500, has been introduced by Dryomatic Corp., Dept. AC&RN, 806 N. Fairfax St., Alexandria, Va.

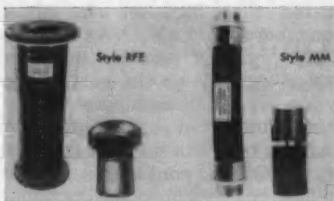
The model can remove up to 40 lbs. of water per hour and will maintain humidity levels as low as 10% r.h., the company claims. The machine uses two beds of permanent silica gel drying agent; while one bed removes moisture from the air, the other is regenerated by the most economical source of heat available, whether electrical, steam, or gas, it was explained.

"In contrast to previous standard Dryomatic units which were controlled by a fixed time cycle, the alternate adsorption and reactivation periods of the model 1500 are spaced by adjustable timers to provide for the most economical operation under varying weather conditions," the company pointed out.

Trying to find
the right man for a
hard-to-fill vacancy—
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Ads are read by your
man.

Place your ad today!

Connections Isolate Pipe Lines from Vibration



Flexible rubber pipe connections have been developed by Vibration Mountings, Inc., Dept. AC&RN, 98-15 50th Ave., Corona 68, N. Y., to dampen noise, vibration, and pulsations in water lines.

Called "Quiet-Flex," the flexible

rubber hose sections completely isolate pipe lines from pumps, centrifugal compressors, condensing units, water chillers, and cooling towers which create objectionable noise and vibration. They also compensate for misalignment and reduce strain on flanges.

Quiet-Flex rubber pipe consists of an inner tube of pure gum rubber or specially compounded synthetic stock, which is protected by a wire-reinforced flexible carcass of multiple plies of strong square woven duck and rubber.

Designs are offered for RFE fittings and MM fittings.

Sheet Metal Elbows Have No Transverse Seams

Heavy gauge sheet metal elbows with no transverse seams are now being fabricated for the first time by Consolidated Ventilating & Duct Co., Inc., Dept. AC&RN, 19-10 Hazen St., Jackson Heights 70, N. Y.

Erwin Yutan, president explained that the elbows are stamped in

two halves and both spot and are welded together.

Designed for high pressure air conditioning systems, they are available in sizes from 3 in. to 12 in. diameters and in a variety of gauges. Lower air resistance and lower cost than built-up elbows are claimed.

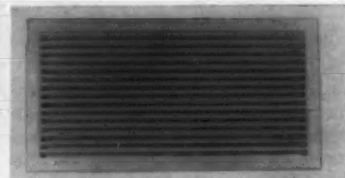


Hill Offers Adjustable Canopy Shelving

Availability of adjustable canopy shelving on meat, frozen food, and ice cream merchandisers has been announced by C. V. Hill & Co., Inc., Dept. AC&RN, Trenton, N. J.

This new shelving, designed to meet the pressing need of more display area, is available in two styles; one or two fully adjustable shelves within the canopy of the fixture and one or two shelves without a canopy. The canopy is 70 in. high and illuminated by

concealed fluorescent lights. The shelving without canopy is 64½ in. high.



New Grilles, Registers Have Fixed Blades

New return air grilles and registers for heating and air conditioning featuring fixed blades with curved hemmed edge of new design have been announced by Waterloo Register Co., Inc., Dept. AC&RN, Waterloo, Iowa.

Curved design results in claimed nearly sight proof grilles without decreasing the area for free air passage. The hemmed edge strengthens the blade and eliminates the sharp edge of previous designs, it was said.

THE ALL NEW, COMPACT

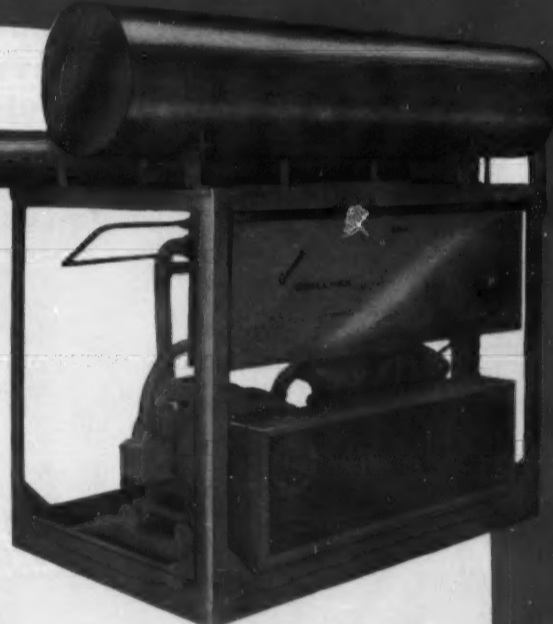
CHILLPAK

SELF-CONTAINED CHILLER UNIT

SATISFABRICATED®
BY
GOVERNNAIR
LOW

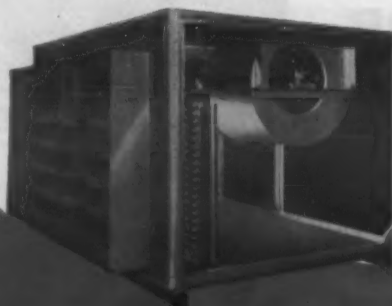
- INITIAL COST
- INSTALLATION COST
- OPERATING COST

Yes, Governair now offers a new, completely self-contained water chiller unit . . . so compact that the 60-ton model, for instance, is only 53" wide, 82" high, 101" long overall. Standard equipment includes heat exchanger and built-in capacity reduction at no additional cost. Each CHILLPAK is carefully factory-tested to assure reliable operation.



Cabinet models available, with built-in or remote evaporative condenser.

By using Governair's copyrighted "Satisfabricated" method, you can "design" your unit to best suit your specification and space requirements. Working from 10 basic models, over 68 flexible combinations . . . from 10 thru 120-ton capacity . . . are available. Write for details, or consult with your local Governair representative for the complete Governair "Satisfabricated" story.



Governair's Air Unit Conditioners provide the perfect companion to the CHILLPAK unit, offering a complete range of capacities . . . from 3 thru 150 tons. Again, by using the "Satisfabricated" method, these units can be tailored to fit even the most unusual space limitations.

GOVERNNAIR

ORIGINATORS OF COMPLETELY PACKAGED AIR CONDITIONING
4840 N. SEWELL, OKLAHOMA CITY, OKLAHOMA

NAPC, MCA Merger Progress--

(Continued from Page 1)

cuss the details and mechanics of the merger.

The MCA "exploratory committee" would then report to the association's board of directors on its findings and recommendations. A final report by the committee would have to be made to the MCA membership 45 days prior to the 1959 annual meeting.

Since the MCA is incorporated under the laws of the state of New York, it is presumed that any plan to merge would have to be approved by a two-thirds vote of the members who participated in a vote on such a plan.

While there has been no "official" invitation for other associations "with common interests" to participate in the merger plans, those who have

been pushing for the merger have let it be known that when the time seems right, such groups will probably be invited to join the discussions, if they express an interest.

The two groups which have been mentioned specifically as possibilities for joining in the merger plan are the Refrigeration & Air Conditioning Contractors Association, and The Sheet Metal & Air Conditioning Contractors' National Association.

The main reason set forth for the failure to "officially" invite these groups into merger discussions was that until the MCA and NAPC will have adopted resolutions permitting a discussion of the merger, no action of any kind could be taken.

RACCA's board of directors

meets June 21 in Chicago, and it is possible that the matter may be discussed at that time. Charles Walling, RACCA president, is a speaker at the national NAPC meeting starting June 30, and other RACCA officials are said to have been invited to attend the convention. The RACCA annual convention is not scheduled until October.

The Sheet Metal Contractors National Association concluded its annual convention in Miami Beach last month, and officials of that group indicated that while word of the merger possibilities had reached them, they had given it very little thought, and had no plans for any future discussion of the subject.

FACTORS FAVORING MERGER

The factors that favor an acceptance of a merger plan between the MCA and the NAPC is the considerable duplication

of membership in the two organizations (one survey indicated that 52% of the MCA members were also NAPC members), plus a possible disinterested attitude on the part of the rank and file members—somewhat indicated by the lack of debate on the resolution at the recent MCA convention—as to what happens on the national level.

(Both groups have many strong local associations with considerable autonomy, and these local affiliates often aren't much concerned with what goes on in the national group, other than as it may affect their local functions. A factor favorable at the local level is that a number of MCA and NAPC local groups have a common secretary.)

The possible "problems" in the merger would seem likely to develop out of some of the inherent differences in not only the make-up of the associations,

but in the make-up of the membership. The old-time rivalry between the plumbing and the steamfitting trades, and between plumbing, heating, and cooling business interests is fading away, but there are some factors in the situation which will need straightening out.

The MCA membership, for the most part, is made up of some 1,200 firms, most of whom are fairly substantial business operations. The dues structure, based on the dollar volume of business done by the individual member, ranges from \$25 to \$500.

The NAPC, with a membership of more than 8,000, includes firms ranging from practically one-man shops to sizable corporations, but all paying the standard yearly dues of \$30.

Furthermore, some of the NAPC members are card-carrying union members (United Association), and the MCA has barred from its membership anyone who belongs to a union.

RACCA CHARACTERISTICS

The RACCA group, formed after the War, has some individual characteristics. Some of its members are franchised distributors and dealers for manufacturers. RACCA has carried a fight to get recognition for a new craft in the United Association setup—the refrigeration and air conditioning fitter.

The Sheet Metal Contractors represent a group that was once engaged in a very exclusive function in the air conditioning field. But today many MCA, RACCA, and even NAPC members have established their own sheet metal shops, as a growing tendency to get all the air conditioning contracting operations under one roof is becoming evident.

MCA SPELLS OUT MERGER OBJECTIVES

The MCA has spelled out some of the objectives of the merged associations, and they generally break down into the following principal categories:

1. *Labor.* A large, united contractor group should, in theory, hold a stronger hand in labor negotiations. Jurisdictional disputes should be settled more readily. The future might hold the possibility of one uniform, industry wide contract.

2. *Trade relations.* The MCA resolution voiced the need for a "strong voice in dealing with other segments of the construction industry, and distributive systems outside the industry." This can be interpreted to mean that the association would concern itself not only with problems and policies of contractors, but also with manufacturers on such matters as long-term guarantees.

3. *Reduced costs.* This means costs to the individual member, whose costs should be reduced in terms of fewer meetings to attend, and through the more efficient operation of a larger, unified organization.

But possibly the most noteworthy objective might be a realignment of association activities on a "horizontal" basis rather than a "vertical" basis. One major contractor, who is influential in association circles, explains this concept along the following lines:

"There are some who might

First All-Purpose Ice Maker B-r-o-a-d-e-n-s Your Market!

**Opens New Worlds of Sales Opportunities
for Dealers Because it Makes Every Size
Ice for Every Serving and Preserving Need**



'58 YORK Cuber WITH ICE SIZE SELECTOR

Think of it! A single, compact icemaker you can sell wherever ice is used in quantity—bars, cafeterias, hospitals, restaurants! The magic feature that makes this York Cuber so versatile is the Ice Size Selector. Simply set the handy selector dial to the size of ice needed and presto—from 225 to 450 lbs. of ice per day is produced for small or tall drinks...for ice foods or ice beds...for dozens of other uses. No chains, cutters, knives...no special attachments required. And it's priced to lease for just \$1.25 per day—far less than most of your customers now pay for delivered ice!

Your FUTURE and FORTUNE
Now Lies With YORK!

YORK

York Corporation, Subsidiary of Borg-Warner Corp., York, Pa.



Tunes Like a Radio...Makes
Up To 450 lbs. of Whatever
Size Ice You Select!

RING SIZE ICELETS THIN ICE

see a merged association of all principal contractor groups split into 'vertical' sections, such as plumbers, mechanical contractors, refrigeration and air conditioning contractors, and sheet metal contractors.

"However, what I'm hoping will occur—and many other contractors feel the same way—is a division for section and programming activities along 'horizontal' lines—that is, by the type of work done.

"In some of the present association setups, there is a wide divergence in the type of contracting activity in which the various members are engaged—some may work only on the largest kinds of new construction or remodeling work, others may specialize on small commercial jobs, others on residential, and some on repair and remodeling work only. And the association has difficulty trying to gear a program and objectives for all of these groups.

"In one big association, I could foresee a division into such major groups as large installations, smaller commercial installations, residential work, and repair and remodeling. Then these groups might meet separately, and have their own programs and objectives, but also be part of the one large over-all association for such objectives as the national over-all group should seek."

Hood To Speak at IRI Award Luncheon June 19

CHICAGO—Guest speaker at the eighth Annual IRI Design Award luncheon will be Robert C. Hood, president of Ansul Chemical Co.

Speaking on "Industrial Design—A Vital Resource to Industry," Hood will outline his theories and experiences in this field before guests of the Industrial Designers Institute gathered to honor the three recipients of the eighth Annual IRI Design Awards, whose names will be revealed at a luncheon on June 19 at the Ambassador East hotel here.

HELP WANTED?

I'm an expert with years of world wide experience. In fact, wherever refrigerators, freezers or air conditioners are repaired by smart businessmen, you'll find me. My name is Frankell's Hermetic Compressor Opener. I can open any shape compressor (up to 20" in dia.) regardless of the weld. And best of all, I take only two minutes of your time to do it! Or any one's time for that matter—I'm that easy to operate—No Gimicks! No Fixtures! No Jigs! Remember, when you open and repair a hermetic compressor, the profits are big. And just one hermetic job a week and I'm paid for in full. I'm recommended by the world's leading firms. These are just a few of my references: American Motors Corp., Kelvinator Div., Detroit, Mich.; Siemens, Erlanger, West Germany; Sealed Unit Parts, N.Y.C.; Tecmar-Carrier, Maricao, Venezuela; Jones Refrigerator Co., Raleigh, N.C.; and many more. I cost only \$695 net F.O.B. N.Y. or I can be rented monthly for an amazingly low cost. Write for complete information today. Write Dept. G Frankell Manufacturing Co., Inc., 1074 Home St., N.Y. 59, N.Y.

Export Facilities

Plant Vacation Schedule Shutdowns Starting

JUNE 30 or Earlier

This is the first in a series of handy guides to vacation schedules announced by manufacturers. It is published to help salesmen avoid useless calls and to assure purchasing departments of adequate stock on hand. This list will not be repeated. CLIP and SAVE for future reference.

Company	Shutdown Period Plant	Office	Shipments From Plant
Acme Electric Co., Cuba, N. Y....	6/27-7/14	6/27-7/14	Stock Only
Admiral Corp., Galesburg.....	6/19-7/11	Open	Stock Only
Chicago.....	6/30-7/14	Open	Stock Only
American Air Filter Co., Louisville	6/28-7/13	Open	Emergency
Armstrong Furnace Co.....	6/23-7/6		Stock Only
Auer Register Co., Streamliners...	6/30-7/14	Open	Stock Only
Brundage Co.....	6/28-7/7	6/28-7/7	Stock Only
Bryant Mfg. Co., Carrier Corp....	6/29-7/13	6/29-7/13	Emergency
Cambridge Filter Corp.....	6/25-6/30		Emergency
Flexible Tubing Corp.....	6/30-7/8	6/30-7/8	None
General Machine & Mfg. Co.....	6/29-7/6	6/29-7/6	Emergency
Hart & Cooley Mfg. Co.....	6/27-7/14	6/27-7/14	Emergency
H & H Tube & Mfg. Co.....	6/27-7/7	Open	None
Iron Fireman Mfg. Co.....	6/30-7/11	Open	None
Kason Hardware Corp.....	6/30-7/11	6/30-7/11	None
Kirsch Co., Refrig. Div.....	6/28-7/12	Open	Emergency

Company	Shutdown Period Plant	Office	Shipments From Plant
Lehigh Mfg. Co.....	6/28-7/6	6/28-7/6	Stock Only
Mayflower Air Conditioners, Inc...	6/22-6/28	6/22-6/28	Emergency
McCall Corp.....	6/28-7/13	Open	Stock Only*
			*Second week only
Nibco, Inc.....	6/30-7/13	6/30-7/13	Stock Only
Reading Tube Corp.....	6/27-7/13		Stock Only
Revere Copper & Brass, Inc.....	6/30-7/11	Open	Stock Only
Sequoia Mfg. Co.....	6/23-7/4	Open	Stock Only
Southwest Mfg. Co.....	6/9 -6/20	6/9 -6/20	Regular
Spencer Thermostat Div., Metals & Controls Corp.....	6/28-7/13	Open	Emergency*
			*Second Week Only
Viking Air Products.....	6/27-7/13	Open	Stock Only
Wagner Electric Corp.....	6/30-7/13	Open	Regular
Williamson Co.....	6/20-7/7	Open	Regular

American Air Filter Shipments Rise

LOUISVILLE, Ky. — American Air Filter Co. President W. G. Frank reported that shipments for the first six months of the fiscal year totaled \$21,766,000 as compared with \$20,165,000 last year. Earnings were \$1,138,000 as compared with \$1,140,000 for the same period in 1957. Due to an increase in the number of common shares outstanding the per share earning was \$2.53 against \$2.67 last year. Frank also stated that the backlog of unshipped orders of commercial products was only slightly lower than last year.



Ultra-Sorb drying agent adsorbs more, retains more moisture—even at high temperatures

There's no such thing as a little moisture in a refrigerating system. A tiny trace can spell big trouble for the user, and for the installer or serviceman. That's why profit-wise operators use Frigidaire Ultra-Sorb Thuro-Driers—and nothing else—to clean and dehydrate every type of refrigerating and air conditioning system.

Ultra-Sorb Thuro-Driers are superior to ordinary dehydrators in three important ways:

FIRST—New "wonder" drying agent adsorbs more moisture, more acids, and salts than other materials used for this purpose.

SECOND—Ultra-Sorb drying agent has the unusual ability to hold moisture at high temperature, when other materials release it back into the system.

THIRD—Ultra-Sorb drying agent is in the form of clean hard beads, minimizing pressure loss. It does not break down—may be left in the system permanently.

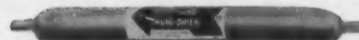
THE FRIGIDAIRE DISTRICT OFFICE serving your area has Ultra-Sorb Thuro-Driers for every need and purpose. Also a complete selection of precision-built genuine Frigidaire parts and accessories, famous for quality and dependability.



A COMPLETE LINE FROM ONE SOURCE Every Type, Every Size You Need



For capillary systems



Solderless, flare, and sweat fittings



1/4 to 20 H.P. capacities



Matching Frigidaire refrigerant control valves Expansion and cooling unit control valves for finest performance of any refrigeration system.

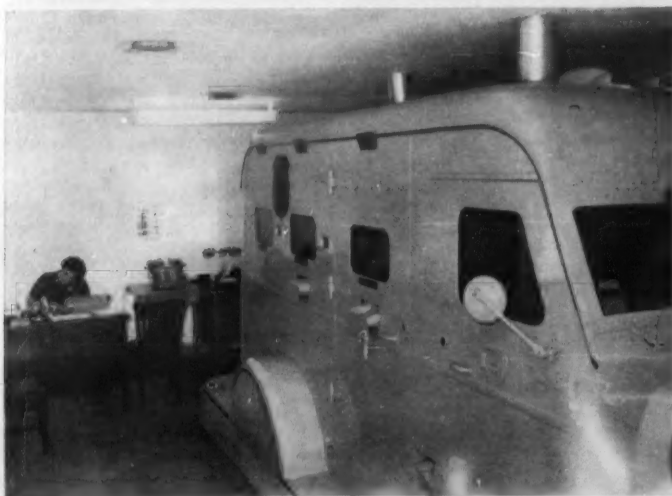
FRIGIDAIRE Ultra-Sorb THURO-DRIERS



FREE 12-page illustrated booklet describing new, improved procedures for cleaning, dehydrating sealed and open-type systems, in the shop and on the job. Mail coupon or write Frigidaire, Dayton 1, Ohio.

Service Department 1004
Frigidaire Div., General Motors, Dayton 1, Ohio
Send **FREE** booklet on cleaning and dehydration.
Name _____
Address _____
City _____ Zone _____ State _____

Air Conditioned Armored Truck Is Cashier's Cage



AIR CONDITIONED Brinks armored truck served as cashier's cage in the temporary headquarters of the National Bank of Commerce in Norfolk, Va. Roof ventilator louvers were removed from the truck for ductwork.

Temporary Arrangement Provided Comfort, Met Insurance Requirements

NORFOLK, Va.—An unusual application of an air conditioner was made by Climatmakers, Inc. here.

Climatmakers installed a 2-hp. Mitchell stow-away unit, model QR-200, to cool a Brink's armored truck serving as the cashier's cage in the temporary office of the National Bank of Commerce in Norfolk.

The bank was building facilities in the Southern Shopping Center of Norfolk. Since much of the shopping center was already open, bank officials decided to open a temporary office until their new building was ready for occupancy.



MITCHELL stow-away unit was mounted outside the temporary bank building just below the roof. Air was ducted to armored truck and through ceiling of temporary bank quarters.

The office consisted of a Brink's armored truck enclosed in a wooden structure—the armored truck serving as the cashier's cage.

The problem facing Climatmakers was to make the inside of the bullet-proof car livable while at the same time meeting the rigid safety requirements of the insurance firm.

Removing the ventilator louvers in the roof of the truck

and connecting them to a Mitchell QR-200 with a thermostat inside the truck solved the problem very satisfactorily, according to Henry T. Rogerson, president of Climatmakers. The QR-200 was installed through the wall at one end of the building just below the roof.

The bullet-proof glass between the cab and the rear of the Brink's truck was removed so that the air could be circulated and returned from the second opening. Two additional ceiling diffusers were placed in the open area to take the additional capacity of the unit.



EXTRA pure

EXTRA dry

EXTRA easy to use

PENNSALT ISOTRON® REFRIGERANTS IN THE NEW NO-DEPOSIT HANDI-CANS

Now the Isotron refrigerants you need to service household refrigerators and freezers, individual air conditioners, and water coolers are available in Pennsalt's convenient, no-deposit Handi-Cans. Easy to carry... easy to use, Handi-Cans save you time and trouble on service calls.

And remember, all Pennsalt Isotron packages are factory-sealed to assure extra purity and dryness. Isotrons have been approved for original charge and service use by the leading manufacturers of refrigeration and air-conditioning equipment.

Order Pennsalt Isotrons in the convenient Handi-Can* or in cylinders from your nearby Pennsalt refrigeration wholesaler. Or write for information to Isotron Dept. 653, Pennsalt Chemicals Corporation, 3 Penn Center, Philadelphia 2, Pa.

*Handi-Can is a trade-mark of Pennsalt Chemicals



EXTRA CONVENIENCE

Handi-Cans of Refrigerants 12 and 114 are now available from wholesalers in special "6-pack" carriers. Vapor pressure charts and tubing gages are printed on every Handi-Can.



ISOTRON
THE KEY TO MODERN LIVING

American Coils Names John Kirk Vice Pres.

FARMINGDALE, N. J.—John A. Kirk has been appointed vice president in charge of production for American Coils Co., the firm's president, Michael Parcaro, announced recently.



J. A. Kirk

The new officer has responsibility for production planning for the company's air conditioner, water chiller, forced heat convactor, and heat pump lines, as well as general company management. He was formerly assistant to the executive vice president.

Airtemp Names Fitch, Regan To Sales Posts

DAYTON—Two major managerial appointments within the company's national sales organization were announced by Airtemp Div. of Chrysler Corp.

Warren Fitch has been named manager of the company's northeast sales zone (headquarters Leonia, N. J.). He moves from the firm's southeast zone (headquarters Atlanta) where he has held a similar post.

W. L. Regan has been appointed southeast zone manager, succeeding Fitch. Regan has been supervisor of dealer development for the same zone.

AIR DEFLECTORS

For installation on wall registers for perfect air conditioning comfort. Made of crystal-clear heavy plastic.



— write —
DEFLECT-O COMPANY
1704 Trumbull St.
Indianapolis, Indiana

Air Distribution Requirements In Year-Round Air Conditioning

Part 2—Fundamentals of Air Handling

By Frank D. Klein, Chief Engineer, Governair Corp.

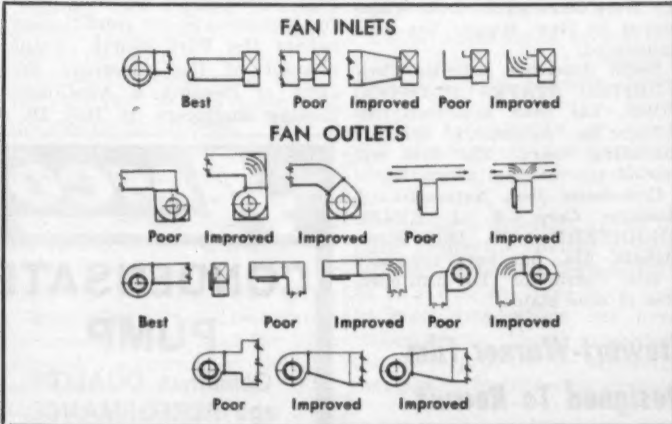


Figure 25

2. THE RELATION OF RESISTANCE TO FAN SPEED

The resistance of an air handling system varies as the square of the fan speed of rotation.

Calculated as:

$$P_n = P_o \times \left(\frac{S_n}{S_o} \right)^2$$

Where:

P_n equals new static expected.

P_o equals static pressure at previous speed.

S_n equals r.p.m. at new speed.

S_o equals r.p.m. at previous speed.

This same Formulae can be applied to Static Pressure, Velocity Pressure, and Total Pressure of the system as well, as they each vary with the square of the fan speed of rotation. Refer to the previous example where the Static Pressure was given as 1.0 in. wg. When the speed of rotation was accelerated from 500 to 600, the new static pressure could be calculated as:

$$P_n = 1 \times \left(\frac{600}{500} \right)^2 = 1 \times 1.2^2 = 1.44 \text{ in. wg.}$$

3. THE RELATION OF POWER TO SPEED OF FAN ROTATION

The power necessary to operate a fan varies as the cube of the speed of rotation. Which can be,

Calculated as:

$$HP_n = HP_o \times \left(\frac{S_n}{S_o} \right)^3$$

Where:

HP_n equals Horsepower required at new speed.

HP_o equals Horsepower required at old speed.

S_n equals r.p.m. at new speed.

S_o equals r.p.m. at old speed.

Still using our original example, assume that a 2.5-hp. motor was used to drive the fan at 500 r.p.m., delivering 5,000 c.f.m. When the speed of rotation was changed from 500 r.p.m. to 600 r.p.m., we accomplished 6,000 c.f.m. and the power required would be,

$$2.5 \times \left(\frac{600}{500} \right)^3 = 2.5 \times 1.2^3 = 2.5 \times 1.728 = 4.32 \text{ HP.}$$

There are numerous ways by

which centrifugal fans can be installed in either equipment or Duct and Plenum rooms. One cardinal rule, however, applies in all cases: the logarithmic spiral of the fan housing, with its result directional motion of air leaving the wheel must discharge on an outlet-diffusion principle. This simply means that the maximum of discharge efficiency is accomplished only when the air leaving to discharge is unobstructed by sharp edges, corners, or baffles.

Tutt in his Text, "Principles of Air Distribution" has grouped a series of progression in fan outlets, which summarizes fan placement in a system for the optimum in discharge efficiency. To contractors and installers of

equipment bearing integral fan sections, little is accomplished by the equipment manufacturer in placing his fan equipment if in installation these principles are in turn violated. (See Fig. 25.)

The increasing trend toward greater statics and higher pressure systems in air handling points up the necessity for knowledge of fan-blower equipment, its ratings, its limitations, and its adaptability based on all of these which result in operating or Total Efficiency.

(To Be Continued)

Carrier Div. Opens Columbus, Ohio Office

COLUMBUS, Ohio—Carrier Corp.'s Machinery and Systems Div. will open a branch office at 2025 Riverside Dr. here, it was reported recently by the company.

Capt. Urdahl Heads New Engineering Firm

WASHINGTON, D. C.—Formation of Urdahl Associates, a professional engineering firm with offices at 1300 Connecticut Ave., N.W., was announced here recently by Captain Thomas H. Urdahl.

Joining forces with Capt. Urdahl, who has been an air conditioning engineer since 1928, are Paul S. Bauer, retired Navy captain who was commended during World War II for application of electronics to aviation; Lawrence N. Gonzales, projects director; and Robert B. Keating, executive engineer and special foreign representative.

During World War II, Capt. Urdahl was officer in charge of all air conditioning design policy, research, equipment development, and procurement for the United States Fleet.

NEW CHEVROLET LOAD HUSTLERS—DESIGNED FOR STYLE AND SAVINGS!



STYLE LEADERS!

Here are trucks you'll be proud to put your name on! Chevy's high-style appearance will make you look good wherever you go . . . and your business is bound to benefit! And it's practical styling that pays off in extra utility. Handsome new Fleetside bodies, for example, are double-walled where it counts. They take a beating from cargo and still keep their good looks. And they offer the biggest loadspace of any comparable low-priced pickup. Thrifty Chevrolet Stepside pickups offer 78-, 98- and 108-inch bodies. If your job calls for a panel, you can choose from models with eight- and ten-foot bodies and G.V.W. ratings up to 7,400 lbs. Or, for door-to-door deliveries, consider Chevrolet's new Step-Van. This fast-working Forward Control truck comes complete with 8-, 10-, or 12-foot walk-in body. Chevy's got a handsome answer to your light-duty hauling needs!

BIGGEST SAVERS!

The standard engine in all these Chevrolet trucks is the most popular dollar-saver in the history of hauling—the latest edition of Chevy's Thriftmaster 6. It delivers 145 h.p., has 235.5 cu. in. of displacement, reliable valve-in-head design, high 8.25 to 1 compression ratio and many more budget-minded features. Or choose the optional Trademaster V8 with 283 cu. in. of displacement, short-stroke design and hydraulic valve lifters for stay-on-the-job economy. Rugged, dependable axles and smooth, efficient transmissions help keep your Chevy saving on the job, too. Make it a point to get the whole Chevy story from your nearby Chevrolet dealer soon. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.



CHEVROLET TASK-FORCE TRUCKS

Now Representing...

Drayer-Hanson, Div. of National-U. S. Radiator Corp.—ROCKY MOUNTAIN AIRCOLD CO., recently-formed sales representative organization in Denver, has been named sales agent. Firm's principals are Dean L. Heglin, president, and V. L. Herzog, vice president and secretary. Both were formerly associated with Thermo Supply, Inc., Denver, which, until recently, represented Drayer-Hanson in the Colorado sector.

BILL WALSH of Pacific Monitor, Seattle, has been appointed sales agent in Oregon and Washington. Drayer-Hanson sales in the Pacific Northwest were formerly handled by Lloyd Backstrom & Co., out of Portland.

Recold Corp.—CROWN REFRIGERATION SUPPLY CO., Baltimore, has been appointed a Recold wholesaler. P. H. HUTCHINSON & ASSOCIATES, Pensacola, Fla., has been named air conditioning representative in north-

west Florida and southern Alabama.

Carrier Corp.—Designation of AIR CONDITIONING DISTRIBUTORS, INC., DeWitt, N. Y., as distributor of engineered air conditioning equipment in the central and northern New York area has been announced. The firm will handle equipment for both commercial and industrial installations.

Frick Co.—POWERS REFRIGERATION, Los Angeles, has been named distributor of refrigerating equipment in southern California, Arizona, and Clark County, Nev. Felix Powers has been active in refrigeration work since 1911.

Gibson Refrigerator Co.—JOE L. PLEASANTS, INC. has been appointed distributor in the Charlotte, N. C. area. SYLVANIA SALES CORP. was named Buffalo area distributor. Appointed Indianapolis distributor of room air conditioners and dehumidifiers was

FEDERATED DISTRIBUTING CORP.

Tuck-Aire Furnace Co. (San Francisco)—RICHARD T. MARSHALL has been appointed manufacturer's representative in Houston, Texas.

The Trane Co.—Appointment of WHITESELL REFRIGERATION, Hamilton, Ohio, as an authorized source of package air conditioning equipment was announced.

Trion, Inc.—R. M. TOUCEY has been named manufacturer's representative in the Pittsburgh area. He was a representative for The Trane Co.

Chelsea Fan & Blower Co.—SCHOOLES-GORMAN CO., Kansas City, Mo., has been named sales representative in Kansas, Oklahoma, and western Missouri. In eastern Missouri and southern Illinois, new representative is B. S. FORESTER, St. Louis. New representative in Texas is H. R. ONARECKER & CO., Houston. PETE BACH ELECTRIC, Portland, Ore., is representative for Washington, Oregon, Idaho, and Montana.

Nitrogen Div., Allied Chemical Corp.—P. G. WALKER & SON, INC., Springfield, Mo., has been appointed agent to handle sales for Barrett Brand anhydrous ammonia in cylinders in the quad-state area of southwestern Missouri, Arkansas, Oklahoma, and Kansas.

Howard Refrigerator Co., Inc.—Appointment of PAT CO-OP AGENCIES as representative in the West Coast states from Washington to New Mexico has been announced.

North American Asbestos Corp.—UNITED STATES PLYWOOD CORP. has been appointed distributor for "Asbestolux," fireproof insulating board. The firm will market the material nationally.

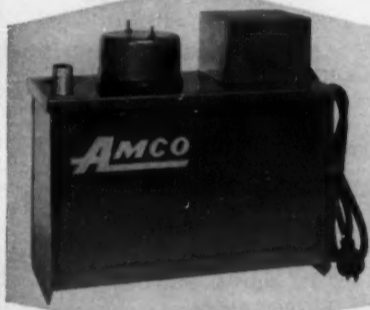
Cyclotherm Div., National-U. S. Radiator Corp.—F. J. EVANS ENGINEERING CO., INC., Birmingham, Ala., has been appointed a sales distributor. The firm operates in nine states.

Fort Worth ASHAE To Hear C. W. Pollock

LOS ANGELES—C. W. Pollock, manager of air conditioning and refrigeration at Drayer-Hanson, Div. of National-U. S. Radiator Corp., will discuss high pressure air handling units for system-type air conditioning before the Fort Worth, Texas chapter of the American Society of Heating & Air-Conditioning Engineers on July 16.

AMCO CONDENSATE PUMP

Combines QUALITY and PERFORMANCE WITH LOW COST



- Positive displacement electric switch w/float control
- Completely Automatic
- Small and Compact Size—6" x 9" x 13"
- Ready to Install

AMCO Condensate Pump has no equal for efficient, quiet, trouble-free operation... will remove cold or hot condensate fluid from receiver tank, boilers, air conditioning systems and pumps it to outside drain. Has 1/30 H.P. Motor, 20 ft. head (most powerful made—will deliver up to 371 G.P.H.) has 6 ft. heavy rubber cord, shock proof plug. Shipping wt. 13 lbs.

List Price **\$50.00**

Dealer Discount 50%. Add'l Discounts for quantity.

Don't break concrete! Save Time! Get More Jobs Done!

AMCO

AMERICAN COMFORT MANUFACTURING COMPANY

2401. Main Street
Evanston, Illinois
DAvis 8-9200

Send for literature and price list today.

NOW-

increase profitable sales with a complete line of **VILTER** ammonia refrigeration equipment



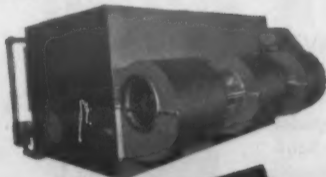
Vilter Shell and Tube Condensers—3 to 500-ton capacities.



Vilter Polarflake Ice Maker—available up to 5-ton capacity.



Vilter Pakicoolers—1 to 30-ton capacities.



Vilter Evaporative Condensers—30 to 300-ton capacities.



Vilter Zer-O-Disc Fin Coils—provide slow, even, positive air circulation.



Vilter VMC Ammonia Compressors—15 to 250-ton capacities.

Substantial sales are now possible in numerous areas for distributors prepared to offer a complete line of ammonia refrigeration equipment. With the versatile Vilter ammonia line, you can handle practically any commercial and industrial refrigeration application in your area on an attractive competitive basis.

The Vilter ammonia line consists of VMC compressors, 15-250 ton capacities, booster compressors, plus a wide range of associated refrigeration equipment—evaporative condensers, blast freezers, brine coolers, ice machines, shell and tube condensers, and cooling coils among others.

Vilter distributors enjoy many sales advantages:

- ★ Outstanding line of refrigeration equipment—known for its dependable service; long life; efficient, economical performance.
- ★ Equipment backed by ninety-one years of intense activity in engineering and research.
- ★ Strong home office support. Engineering application counsel is always available.
- ★ Wide acceptance of Vilter equipment in all industries using refrigeration.
- ★ The Vilter line is advertised widely in the trade press.

It will pay you to consider the Vilter line of ammonia refrigeration equipment for your area. High sales potential. Good profits. For distributors interested in the entire Vilter line there is a full Freon compressor line plus air conditioning equipment. Don't wait! Get acquainted now. You will like our way of doing business.

Vilter

REFRIGERATION and AIR CONDITIONING

THE VILTER MANUFACTURING COMPANY • Milwaukee 7, Wis.

Ammonia & Freon Compressors • Pakicoolers & Polarflake Ice Makers • Ammonia Liquid Transfer Systems • Evaporative & Shell & Tube Condensers • Pipe Coils • Valves & Fittings

WRITE IN NOW FOR COMPLETE INFORMATION

The Vilter Manufacturing Company, Dept. G2
2217 S. First St., Milwaukee 7, Wis.

Gentlemen: Please send me the checked information—
☐ Distributor information.
☐ Ammonia compressors and refrigeration equipment.
☐ Freon compressors.
☐ Air conditioning equipment.

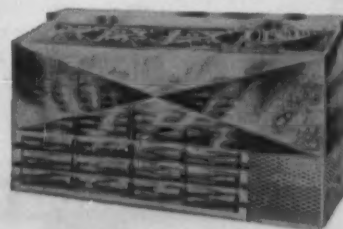
Name.....
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Company.....
Address.....
City.....Zone.....State.....

PHCI Bureau Passes 600 Mark In May

CHICAGO — Membership in the Plumbing-Heating-Cooling Information Bureau passed the 600 mark on May 1, the bureau announced recently.

Members include 74 manufacturers, 245 wholesalers, and 233 contractors. Membership also includes 29 associations, the United Association (AFL-CIO), and 11 industry publications.

"A CASE OF COOL JUDGMENT"



FLO-COLD DRINKMASTER
STAINLESS STEEL
CUBER — COOLER.

SOLD THRU DEALERS ONLY
WRITE

United Friguator Engrs.
MENOMINEE, MICH.

AVAILABLE IN SIZES 4 to 10 FT.

UA Reports 'Considerable Progress' In Organizing Refrigeration Field

WASHINGTON, D. C.—Peter T. Schoemann, general president of the United Association, reported to UA members that "due to the efforts of your general office and the cooperation of local units, considerable progress has been made during the past year toward organizing the refrigeration field."

This was pointed out in a review of 1957 activities, published in the UA Journal. The articles also covered such subjects as jurisdictional disputes, national agreements, and pipe pre-assembly in fabricating shops.

Regarding refrigeration, Schoemann noted that the 27th general convention of the UA authorized refrigeration divisions in its building trades local unions.

"Many of these divisions have been established, and, as a result, many agreements on a state and area basis have enabled a freedom of movement for refrigeration mechanics in the employ of refrigeration and air conditioning contractors."

Report Membership Gain

Among other things, Schoemann reported a net gain of more than 6,500 UA members last year.

He also stated that freedom of movement for all UA building trades members "received a new boost when the National Committee on clearance cards hammered out new transfer and travel card provisions for the UA constitution. These provisions became law last July after approval by the General Executive Board."

"Travel cards now enable building tradesmen in our industry to move temporarily to another local union seeking work without changing local union membership. Transfer cards are now used for permanent changes in residence and local union membership."

Regarding Jurisdictional Disputes

Regarding jurisdictional disputes, Schoemann stated that no settlement was in sight of conflicts between former CIO unions and the building trades over plant construction work.

"I have had the privilege of serving on a 13-man committee of the AFL-CIO, headed by President Meany, seeking a solution of the conflicting claims," he noted. "Building trades members of the committee are continuing to seek, so far without success, a formula under which joint finding teams may investigate each situation with a view toward assisting settlement."

"I can assure you that we will nevertheless strive to end these conflicts without compromise or concession of our traditional building and construction trade jurisdiction."

Turning next to national agreements, Schoemann reported: "Year in and year out, the United Association has vigilantly protected work which our local unions are not in a position to control."

"This is a necessary function of an international union. It is

carried out through a series of national, and sometimes even localized agreements with companies performing specialized types of work nationally.

"I am speaking of several different kinds of contractors, such as those building power houses and oil refineries, or installing instruments, or sprinkler systems, or pre-assembling large piping systems off the job site."

"For each different group we have gradually devised several different types of agreements. In this way we have been able to man jobs where our local unions have been completely unable to provide the necessary manpower. In this way we have

secured work for our members which our local unions could not alone provide."

Schoemann also stated in his report that one type of work which many UA locals have frequently been slow to organize is piping pre-assembled in permanent fabricating shops. "This pipe is put together in the shop just as it might otherwise be put together on the construction job site before final installation," he explained.

"To prevent standards in the shop from undermining standards and working conditions on the job site," Schoemann said, "we signed an agreement a little more than a year ago with the Pipe Fabrication Institute. This organization is composed of several large firms engaged in pre-assembly work, and the agreement can, of course, be extended to many additional piping companies."

You Asked About It

From the many requests for information it receives, the NEWS will select and publish some of general interest. In many instances, the answers will be supplied by authorities in the industry.

Q. In your May 12 Technical Center, you mention an article on thermoelectric refrigeration which appeared in a German Magazine. I would like the name and address of the publication.

A. In addition, I should like leads to other articles on thermoelectric refrigeration.

F. J.—New York

The German article mentioned appeared in the January, 1958 issue of "Kaltetechnik" which is published at Verlag C. F. Muller, Karlsruhe, Germany.

Perhaps the most comprehensive review of thermoelectric refrigeration is contained in a new book, "Semiconductor Thermoelements and Thermoelectric

Cooling," by A. F. Ioffe. The book is published by Infosearch, Ltd., London. Ioffe is Director of the Institute for Semiconductors of the USSR Academy of Sciences.

In addition to giving a good review of theory and of Russian accomplishments in the field of thermoelectric refrigeration, the book contains an extensive bibliography of other material.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich. Only 25¢ each.

NOW...FROM REMCO

MOLECULAR SIEVE FILTER-DRIERS

WITH DEPTH FILTRATION

Utilizing advanced design Molecular Sieve cartridges, these new Remco Filter-Driers combine unequalled drying efficiency, effective acid removal, generous flow capacity and depth filtration.

The massive depth filter completely removes all scale, sludge, carbon and other particles as small as 100 microns, without affecting flow or pressure drop. In addition, there's a fine mesh outlet screen.

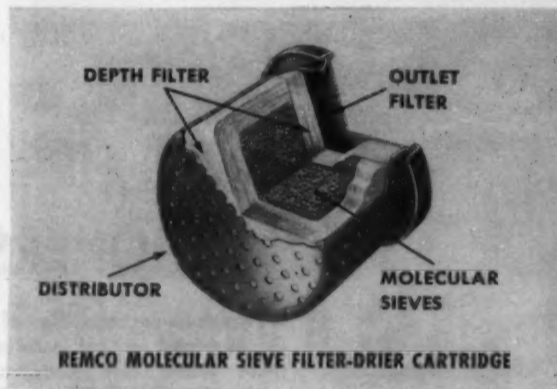
Large quantities of moisture are adsorbed and retained even at refrigerant temperatures of 140 F. Moisture concentrations are held to 10 p.p.m. or less, and acids reduced far below dangerous corrosion limits. Refrigerant and oil are not adsorbed.

Compact in size, Remco Molecular Sieve Filter-Driers are great space savers and work equally well in the hot machine compartment, the refrigerated space, or a hot equipment room. U/L Approved, the working pressure is 500 p.s.i.; minimum bursting pressure, 2500 p.s.i. The filter-driers may be used for Refrigerants 12 or 22, Carrene, or methyl chloride.

REPLACEABLE CARTRIDGE TYPE units come in 3 basic sizes and have a single cartridge which can be easily installed or replaced. An "O" ring provides a positive, leakproof flange seal. From 3 to 40 tons with 3/8" thru 1 1/2" sweat connections.

SEALED TYPE filter-driers are available in 4 basic sizes, 1 to 12 tons, with 1/4" thru 3/8" flare and 3/8" thru 1/2" sweat connections.

"T" FITTING TYPE supplied in 2 basic sizes, 2 to 6 tons, bring all the advantages of Remco Molecular Sieve Filter-Driers to systems having standard "T" fittings.



Remco Filter-Driers are available at leading wholesalers everywhere. Ask your wholesaler for more information, or write for Bulletin MS-1. Remco, Inc., Zelienople, Pa.

REMCO

MANUFACTURERS OF ADVANCED REFRIGERATION PRODUCTS
FILTER-DRIERS • LIQUID INDICATORS • RECEIVER-DRIERS
CHECK VALVES • SAFETY DEVICES • FROST-TITE FLARE NUTS



Gas Industry Sees Air Conditioning as 'Greatest Hope' and 'Greatest Threat'

By C. Dale Mericle

The gas industry's intensive and expensive research program could be interpreted as admission that it still lacks the ideal unit for residential cooling, but the industry is no longer waiting for that happy day of the future.

Instead it is aggressively promoting air conditioning this year with what it has to offer, which for the residential field means the Arkla-Servel "Sun Valley" year-round unit.

The reason why was very well summed up by L. T. Potter, president of Lone Star Gas Co., in a talk before the national AGA financial forum last year. "Air conditioning is the

greatest hope of the gas industry—but air conditioning is, at the same time, the greatest threat to the well being of our industry," Potter declared.

"Air conditioning with gas is the hope, air conditioning with electricity is the threat. The hope is that the gas industry will continue and will grow as the foremost provider of human comfort to the ultimate consumer.

"The threat," Potter said, "is that the gas industry will become predominantly a seller of industrial fuel in wholesale lots—gradually withdrawing from direct service to the residential consumer.

"The degree to which either of these extremes will be approached in actual experience within the gas industry will be controlled largely by the success our industry may have in the air conditioning field," he emphasized.

"No longer can the gas industry look at cooling as if it were

This is the conclusion of a two-part article on gas air conditioning which began in the June 9 issue. It deals chiefly with the promotional efforts of the gas industry. Part I provided a summary of the research activities of the group.

distinct and apart from its house heating service," Potter also warned. "No longer can our industry figure on attaching cooling load simply as a desirable adjunct.

Sees Cooling Load as Absolute Necessity

"Rather, our industry must attach cooling load as an absolute necessity in holding its house heating load. This hard and inescapable prospect arises out of the desires of customers, to be sure, but it arises even more forcefully out of the necessities confronting our electric friends.

"As they have harvested a large and growing crop in the field of comfort cooling service, they have developed the urge and, even the compelling requirement, to make excursions into the house heating and other loads, considered by the gas industry to belong to it," Potter suggested.

AGA Booklet Details Plan of Action

These statements are given a prominent position in the recently issued AGA booklet "Steps to Success," which details "a plan of action for utility gas air conditioning programs."

Prepared by the group's Air Conditioning Promotion Committee, the booklet contains many things of interest to anyone in the air conditioning industry:

Item: "The National Electrical Manufacturers Association estimates that there are now nearly a half million houses in the United States completely electrically heated. NEMA further estimates that there will be a million electrically heated homes by 1960 and three million by 1966."

Item: "There are more than six million forced warm air gas heating systems in use, of which 4½ million furnaces were designed for gas, and nearly two million are equipped with gas conversion burners. These are our best prospects in the replacement market for the sale of gas year-round air conditioning equipment or the addition of supplementary cooling equipment. Eighty-one per cent of all central cooling systems sold in 1956 went in with gas heat! This is a ready-made market for us."

Item: "Approximate gas

usage, assuming a typical distribution of available gas air conditioning equipment, in any given community, is 23 to 24 cu. ft. per ton for each hour of full load operation."

Sound Economic Reasons

Item: "There are a host of sound economic reasons why gas utilities should promote gas air conditioning. A combination company can push it without shortchanging its electrical load. As a matter of fact, a study made by one gas company showed that if a certain public building were to install gas air conditioning, the electrical company would receive additional annual revenue of \$2,200 and the gas company would receive only \$1,600."

Item: "Pricing of gas air conditioning units by utilities have been adjusted in the main to local market situations. Certain very aggressive utilities, particularly where a shortage of gas for house heating exists, have subsidized the sale of direct-fired absorption units when sold to the public, dealer, and builder.

"Subsidy should become less of a necessity as increased volume of production and new manufacturer designs reduce the cost of gas units. However, our first concern is the present market—not future possibility."

Emphasizes Sales To Government

The AGA booklet outlines the usual facets involved in promoting and selling air conditioning in the residential, commercial, and industrial field, and puts some emphasis on sales to government.

Here the gas industry is interested in sales to Federal buildings as represented by the General Services Administration and Department of Defense installations, including Capehart and other types of military housing.

Two moves along this line were the recent appointment by AGA of a "utilization engineer" in Washington to maintain regular contact with military and other government agencies and the "Zinder Report" comparing costs of gas and electric service in multiple housing.

Prepared by H. Zinder & Associates, Inc., Washington consulting engineering firm, apparently for AGA and the Southern Gas Association, the report created some stir among government officials and heat pump manufacturers when it was released in December, 1957.

Fuel Costs Compared

Fuel costs were compared in this report for three typical plans of utility services: A—"All Gas" (gas is used for cooking, water heating, space heating, and summer cooling with electricity limited to lights, refrigeration, and small appliances); B—"Combination Gas and Electric" (a conventional air-cooled electric air conditioning system is substituted for the gas unit), and C—"All Electric" (electricity is used for all purposes, including space heating and cooling with a heat pump).

The Zinder Report claimed fuel costs were considerably less in "all-gas" plans than in

"all-electric" systems, but it also pointed out that a full cost comparison of the plans would also have to include studies of initial cost of appliances and equipment, gas piping and electric wiring, changes in design and construction of dwellings required with alternate choices of service, estimated service lives of equipment, maintenance and repairs.

Chief promotional efforts this year will be aimed at the general public.

AGA, for example, has scheduled 40 full-page advertisements in leading national consumer magazines and sponsors Julia Meade commercials on "Playhouse 90."

Arkla has a broad program of national and cooperative advertising, too, and there'll probably be considerable local advertising by gas utilities. For this purpose AGA has prepared an eight-page newspaper supplement.

HOW TO WIN CUSTOMERS and MAKE FRIENDS—

INSTALL



UNIT AIR CONDITIONERS

Now built in capacities of 3 to 15 tons of refrigeration, these dependable units are profitable to handle, and profitable to own!

Backed by over a half century of air conditioning experience. Fully warranted. Beautiful finish.

Frick units may cost a bit more but are well worth it. They are conservatively rated, and durably built by a company whose policies have been tested through 105 years of successful experience.

Some good territories still open for Distributors.

Get the whole story: write, wire or phone.

DEPENDABLE REFRIGERATION SINCE 1852
FRICK CO.
WAYNESBURG, PENNA., U.S.A.



3-TON



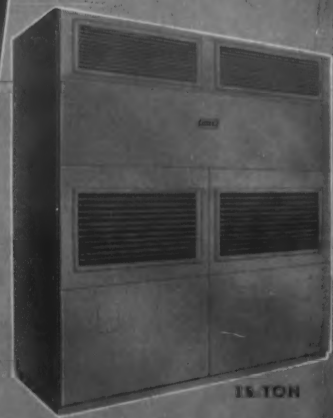
5-TON



7 1/2-TON



10-TON



15-TON

Write for Frick Bulletin 522-F giving full details of the advantages of these unit conditioners.

CALGON* SCALE REMOVER

... makes cleaning cooling water systems easy. Fast-acting, it features corrosion inhibitors to protect the system, and a built-in pH indicator that signals how much to use, and helps to tell when the system is clean. Best bet for obtaining high efficiency and low power costs, because it

CLEANS WITH SAFETY

Scale Remover is one of Calgon's Big 3 cooling water treatment products. It will pay you to use all 3—

MICROMET* PLATES inhibit further formation of scale and protect against corrosion. One charge lasts a whole season in most systems.

CALGON* ALGAECIDE's positive action kills algae and slime growths.

SEE YOUR
REFRIGERATION
WHOLESALE
FOR CALGON'S BIG 3



and for these other quality Calgon products:

BANOX* quickly forms a protective film on metal surfaces. Should be used at Spring start-up, after acid cleaning, and at shutdown.

CALGON GAS LEAK DETECTOR—for fast detection of gas leaks.

CALGON WATERLESS HAND CLEANER—removes all kinds of dirt quickly and easily.

*T.M. Reg. U.S. Pat. Off.

CALGON COMPANY

DIVISION OF HANABE CHEMICALS & CONTROLS, INC.
HANABE BUILDING, PITTSBURGH 20, PENNSYLVANIA
DIVISIONS: CALGON COMPANY, HALL LABORATORIES
IN CANADA: HANABE CORPORATION (CANADA) LIMITED, TORONTO

TECHNICAL CENTER

By Frank J. Versagi, Technical Editor

Copper Tubing (2)

Now, what about "refrigeration tube?" Is it the same as water tube or not?

Yes and no. Water tube, especially types K and L, is used every day in refrigeration installation and service; type M is used in some areas where codes permit. Many times this water tube is purchased "as-is" and is cleaned and dried on the job by the serviceman. Some copper tube manufacturers supply water tube which has undergone special handling—degreased, dried, capped, or pinched closed. Such tube is then referred to as refrigeration tube, and it costs more than water tube.

To pass as refrigeration tube, this specially treated material must pass a maximum residue test in which a maximum of 0.0035 grams of foreign material is allowed per square foot of

inner surface. In these cases, therefore, water tube and refrigeration tube are identical in dimensions and other physical characteristics with the exception of the stricter dryness and cleanliness requirements—for which an extra fee is charged by those supplying the service.

In sizes 3/4-in. O.D. and under, however, there is supplied a special refrigeration tube which, in addition to cleanliness and dryness, has different dimensions than normal water tube. Appropriately called "refrigeration service tube" by some in the industry, this comes in 50-ft. coils rather than the 100-ft., 60-ft., and 40-ft. coils normal for water tube.

Refrigeration service tube has a wall thickness which generally falls between the thicknesses for type L and M in comparable sizes; in addition, refrigeration service tube is available in smaller sizes than is water tube. In all cases, the O.D. is the

same for each nominal size so that both refrigeration and water tube can be used with the same solder fittings.

Dimensional comparisons between copper water tube and refrigeration service tube are given in Table 1.

Summarizing; in sizes of 3/4-in. O.D. and smaller, a refrigeration service tube, which is different in dimensions (wall thickness) than water tube, does exist. Above 3/4-in. O.D., water tube in straight lengths can be dried and capped to make refrigeration tube with the same dimensions as the water tube. In all cases, water tube, properly cleaned and dried, can be used for refrigeration tube—in wall thicknesses the local codes allow.

From this point on, the term refrigeration service tube or merely refrigeration tube will refer either to coils or straight lengths which were dried and capped or crimped by the manufacturer.

The mention of coils or straight lengths brings up another point in copper tube terminology—that of temper or of hardness and softness.

Everyone who has handled copper tube in the field knows that the material will work harden. That is, coils of normally soft tube will become harder and harder as the coil is handled and used—if this handling and use is extensive in degree and time. Some servicemen have a feeling that hard copper tube doesn't silver solder as easily as does soft tube. Others are worried at the effect of a torch on normally hard copper.

As is the case with steel, copper can be supplied in different tempers. Theoretically, these are the tempers:

Hard drawn—obtained by cold drawing with a 40% dimensional reduction;

Light drawn—cold drawing with a 10-25% dimensional reduction;

Light annealed—time/temperature controlled to obtain grain sizes less than 0.040 mm.;

Soft annealed—time/temperature controlled to obtain grain sizes larger than 0.040 mm.

(To Be Continued)

Donaldson Retires

CHICAGO—After 38 years of selling air handling equipment, J. Crawford Donaldson, 70, sales engineer in the Chicago branch office of American Air Filter Co., has retired. He was honored at a dinner.

Table 1—Dimensional Comparison of Copper Water Tube and Refrigeration Tube

(All Dimensions In Inches)						
Nominal Size	O.D.	Wall Thickness				Refrigeration Service
		K	L	M	DWV	
— Water Tube —						
----	1/8	----	----	----	----	.030
----	3/16	----	----	----	----	.030
----	1/4	----	----	----	----	.030
----	5/16	----	----	----	----	.032
1/4	3/8	.035	.030	----	----	.032
1/2	1/2	.049	.035	.025	----	.032
						Begins at
1/2	5/8	.049	.040	.028	1 1/4 Nom.	.035
3/4	3/4	.049	.042	----	----	.035
3/4	7/8	.065	.045	.032	----	Same as water tube above 3/4 O.D.
1	1 1/8	.065	.050	.035	----	May be dehydrated and capped
2	2 1/8	.083	.070	.058	.042	
4	4 1/8	.134	.110	.095	.058	

Plumbers talk nominal; hydronics (wet heat) and refrigeration people talk O.D.

WORKS WHERE OTHERS FAIL



R
S
CONTROLS

FREON-12
FREON-22
COMBINATION WATER REGULATOR
Ask Your Wholesaler

REFRIGERATING SPECIALTIES COMPANY
3004 W. LEXINGTON ST. • CHICAGO 12, ILLINOIS

OVER THE COUNTER OR THRU THE MAIL

There are six well-stocked Harry Alter warehouses located for your convenient pick up. Mail orders are shipped the same day as received, to anywhere in the world. Phone or wire us and you'll usually have it the next day. We are nearby to nearly everyone, with everything they need.



We're Real Specialists in
REFRIGERATION • AIR CONDITIONING • ELECTRIC MOTORS
SUPPLIES and PARTS

SAVE MONEY, time and effort by ordering from our new *Dependabook*, the most complete catalog of all. 160 pages. Over 10,000 items carried in stock. Wholesale only. Your orders filled really fast by mail, or picked up at one of six big warehouses.

Write on your letterhead for the 1958 *DEPENDABOOK*...
Also our monthly *Flyer* of surplus and close-out Bargains.

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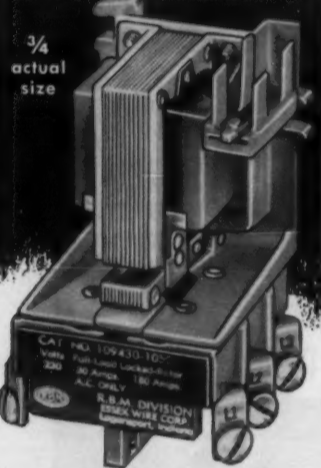
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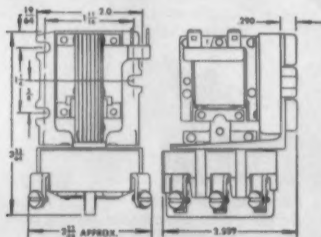
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Slant Fin Radiator Opens Sales Office In Norfolk, Va.

RICHMOND HILL, N. Y.—The Slant/Fin Radiator Corp. has opened a sales office in Norfolk, Va., to cover Virginia and North and South Carolina. The firm manufactures base-board radiation for home and industry, and also special process coils for hot water and steam systems.

Slant/Fin's general sales policy is to employ manufacturers' agents. In explaining the departure from this policy, Alvin Buschel, national sales manager said,

"Within the past year we have made great inroads in the heating market of Virginia, North and South Carolina. Since this is an area that is predominantly a warm air heating stronghold, we feel that direct factory coverage is essential to the full promotion of the advantages of hydronic heating systems."

The Norfolk office is located at 1347 Fisherman's Rd., and is managed by Ralph R. Bautz, Jr.

Simpson Offers Color Slides, Taped Talk for Servicemen

CHICAGO—Simpson Electric Co. here announced the availability of a heat, refrigeration, and air conditioning service program.

The program, consisting of 48 color slides and a 36-minute taped talk, is designed to help servicemen use their Simpson test equipment to greater advantage in the shop or while on service calls, it was explained.

The slides show various Simpson test equipment in use on different pieces of heating, refrigeration, and air conditioning equipment, while the tape gives a running narrative of the specific problem and its solution.

Arrangements for presentation of the program may be made through any of Simpson's 35 area representatives or through the Chicago office, 5200 W. Kinzie St., Chicago 44, Ill.

Imperial Movie Shows Tubing Hazards and How To Avoid Them

CHICAGO—A 20-minute color movie showing some of the hazards encountered in tubing installations and how to avoid them, has been produced by The Imperial Brass Mfg. Co., the firm announced.

The film demonstrates the correct way of handling tube cutting, flaring, and bending operations, it was explained.

The movie is currently being presented at sales meetings with Imperial distributors and also is being used at "Tubemanship Clinics" being held by distributors with industrial plants, and trade schools.

One of the purposes of the film is to highlight installation methods that save time and prevent trouble on tubing jobs, the company said.

Refrigeration Problems And Their Solution (As Written by Paul Reed)

Repairing Damaged Metal Finish (2)

THE METAL-SPRAY GUN

The metal-spray gun was hot enough by this time. It requires about five minutes of preheating before it is ready for use. Its heat is controlled by a tiny built-in thermostat that keeps it at just the right temperature.

In the top of the head of the metal-spray gun is a hole into which the small stick of solder is fed. The electric heating element melts the solder, which feeds downward through a small hole, where it is picked up by the air and sprayed on to the tinned surface in the form of tiny flakes that adhere to the surface and to one another without flux.

SPRAYING ON THE SOLDER

The repairman held the metal-spray gun close to the tinned surface (only about an inch away) and moved it in a slow rotating motion until he had filled the hole and built up the solder to a fairly smooth surface, thicker in toward the center, and "feathered" thin at the edges.

Unlike spraying paint or lacquer, he built the solder up to full thickness at each place as he went, not with successive thin coats over a large surface, as is common practice with spray painting.

The solder is 30-70, that is 30% tin, 70% lead, but it is essential that the solder be as pure as possible. Some commercial 30-70 solders have impurities in them.

For ordinary hot soldering these impurities do little or no harm, but for metal-spraying, the solder must have the very minimum of impurities. The maker of the metal-spray gun furnishes 30-70 solder of a grade suitable for this use.

The air used for this metal-spray gun must be regulated and held to 70 p.s.i.g. Also important, the air must be dried and filtered air, not just air from an air compressor. Water or foreign matter in the air

will result in spotty finishes and poor adhesion of the solder to the surface.

The gun must be kept clean. If used for long periods at a time, it should be examined and cleaned often. It must always be cleaned after every use, while it is hot. Remove the solder, clean out the solder well and blow out the air nozzle.

SANDING AND LACQUER SPRAYING

But to return to the repair job. The dent had been filled and the surface built up with solder, but it was rough. So the next step was to sand it down smooth. This was done with an electric disc sander, using a 36 grit disc. Care was taken to keep the disc on the solder and not allow it to cut into the undisturbed finish.

This final sanding again heated up the surface, so it was necessary



SPRAYING SOLDER with metal-spray gun on automobile body to fill dent.

to wait a few minutes until the surface cooled down to about room temperature. The repairman then blew the surface off with dried and filtered air and it was ready for the base and finish coats of lacquer, which he applied in the usual manner, with the conventional spray gun.

Albertson & Co., Sioux City, Iowa, manufacture and supply the metal-spray gun, Reviver, Cold Tinning Compound, and a suitable grade of 30-70 solder, also electric disc sanders and other types of tools.

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Duct and Fitting Resistance (2)

Good Duct Design Can Minimize 'Trouble' Installations Which Eat Up Profits, Damage Dealer's Reputation

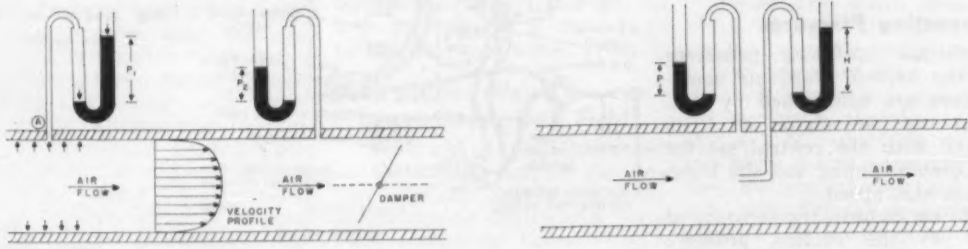


FIGURE 2.

By Dr. Stanley F. Gilman, Associate Director of Research, Research & Development Div., Carrier Corp.

There are actually two kinds of resistances in duct systems. They are pressure loss or resistance due to friction and "dynamic loss," which is a pressure loss caused by a change in either direction or velocity of an air stream.

Friction pressure loss is caused by rubbing action between air molecules. Fig. 2 shows a length of straight duct in which the direction of air flow is from left to right. In the center is a velocity profile which might exist in such a duct.

Velocity is typically highest near the center and decreases as one gets close to the sides. Right at the side, velocity is zero. Consequently adjacent layers of air traveling at different velocities slide by each other.

This mechanism, together with the turbulent mixing of the main air stream, causes energy to be dissipated. This loss of energy is reflected by a decrease in static pressure in the direction of flow.

At the top are shown two pressure measuring devices. They indicate that up-stream pressure, P_1 , is greater than the down-stream P_2 . The difference in heights of these columns of liquid represents the amount of energy, or pressure, lost. This is loss in static pressure.

How Static Pressure Is Measured

It may be desirable to explain how static pressure is measured. At "A" a small hole is drilled in the duct wall. A tube is then connected to a pressure measuring device, in this case a "U-tube."

In air conditioning, it is conventional to measure pressures in terms of inches of water. The reason is that pressures are ordinarily of magnitudes that make it convenient to use water, or a fluid of about the same density, in draft gauges.

Following up the small tube from point A and down the other side, the pressure on the left-hand surface of the water would be that in the duct at point A. The pressure in the right-hand leg of the U-tube will be atmospheric pressure.

Thus, if static pressure in the duct exceeds atmospheric pressure, it will push the column of water down on the left side and up the right side.

The difference in height, shown as P_1 , then represents the static pressure in inches of water as referred to atmospheric pressure.

For example, if this difference

in height were 2 in., we would say that the static pressure at point A is 2 in. of water. Since it takes additional words to say "above atmospheric pressure," generally only the number of inches of water is stated. It is understood that one means "above atmospheric pressure."

There are many conditions when static pressure is below atmospheric pressure. A typical example is static pressure in almost any part of the usual return-air duct system. Care must be exercised to make it clear whether pressure is above or below atmospheric.

Static Pressure Defined

Since static pressure is not the only type of pressure that exists in a duct system, let's define static pressure.

It is the pressure tending to burst the duct and is exerted equally in all directions. It is that pressure perpendicular to the walls of the duct, as indicated by the small arrows near point A.

Since static means "stationary," the hole at point A must be drilled perpendicular to the wall so that it is at right angles, to the velocity of air flowing along the duct. At right angles, it is unaffected by velocity and measures true static pressure.

A familiar example of static pressure is blowing up a balloon. When the balloon is blown up, it has been expanded by having within it a pressure higher than surrounding atmospheric pressure and is in a static condition.

Now the difference between static pressures P_1 and P_2 in a duct of a fixed diameter and length will change as the velocity in the duct is changed.

For example, say average velocity in the duct were 1,000 f.p.m. and the loss in static pressure were 1 in. of water. When we increase the velocity to 2,000 f.p.m., the pressure loss would become approximately 4 in. of water.

The reason for the four-fold increase in pressure loss by doubling the velocity is merely that pressure loss depends on the square of the velocity.

A considerable amount of experimental data has been collected on pressure losses of round and rectangular ducts over the past several years.

The basic work is called the ASHAE Friction Chart. Through a large number of curves it is possible to determine the pressure losses of ducts ranging from 1½ in. to

80 in. in diameter under an extremely wide velocity range.

Friction pressure loss is proportional to the length of the duct. That is to say, a duct 200 ft. long will have twice as much resistance at the same velocity as a duct 100 ft. long.

It is customary to tabulate duct friction loss data in terms of the pressure loss of a 100-ft. long duct. Then, if one has a 20-ft. section of duct, he merely takes a value one fifth of that in the table or chart. It is very easy to determine loss in static pressure in a duct under almost any conceivable condition.

If the damper illustrated in Fig. 2 were changed to the full open position indicated by the dashed line, and conditions upstream were adjusted so that velocity in the duct was the same for both conditions of the damper, then pressures P_1 and P_2 would be different.

But the pressure loss indicated by P_1 minus P_2 would be the same. Thus pressure loss is independent of the level of pressure that exists in the duct.

Fig. 3 shows section of duct with the air flowing from left to right. Here we have two U-tubes. The left tube indicates static pressure existing at the duct by the height of the fluid level shown as P.

On the right-hand side, the U-tube is connected by a small piece of tubing which goes through the duct wall and points up-stream. This tube senses the effect of velocity of the air-stream coming toward it as well as the effect of the level of static pressure surrounding it.

It measures what is called "total pressure" designated by H. Since it measures the effect of velocity in addition to that of static pressure, the difference in level H is greater than that shown by P.

At the bottom an equation for standard air relates these pressures. This equation states that total pressure H is equal to the sum of static pressure P and velocity pressure.

Velocity pressure can be defined as the energy required to accelerate a body to a specified velocity. Velocity pressure for air of standard density is

$$\left[\frac{V}{4005} \right]^2$$

where V is units of feet per minute.

This is very convenient, since any time we know or choose a velocity in a duct we automatically can determine the velocity pressure. Total pressure H represents the total amount of mechanical energy in the duct.

FIGURE 3.

Residential Air Conditioning

What are the fundamentals of air duct and fitting resistance? Why is it important that the air conditioning and heating installer know them?

Knowing them he can do two important things: 1. Design better air conditioning systems. 2. Minimize the number of "trouble" jobs that eat up profits and produce unsatisfied customers.

Last week Dr. Gilman described the consequences of a poor job of evaluating pressure loss and started to explain what pressure loss means. He continues his explanation here.

The fact that a fluid has energy and velocity pressures are by virtue of its velocity is illustrated by a jet of water from a fire hose which can knock a man to the ground.

If one had a certain total pressure available, it could be comprised of a relatively high static pressure in a stream moving at a relatively low velocity.

In a very fast moving air-stream, velocity pressure could be high and static pressure low. We could still have the same total pressure. Indeed, static

Sometimes this will be very slight. At other times this loss in total pressure may be considerable.

A pressure measuring device called a pilot-static tube is available. It combines in one instrument the functions of the two tubes shown in Fig. 3.

(To Be Continued)



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AIR CONDITIONING DIVISION

Servicing Automobile Air Conditioners

(Vol. 2)

BY C. DALE MERICLE

The Ford auto air conditioner is the twenty-first make to be discussed in this series. Makes previously described were A.R.A., Artic-Kar, Frigette, Frigikar, Kauffman, Mark IV, Airtemp, Mobilette, Novi, Vornado, Polar-Temp, American Motors, Buick, Cadillac, Chevrolet, Chrysler, DeSoto, Dodge, Plymouth, and Edsel.

FORD (4)

Ford Div. Ford Motor Co.
Dearborn, Mich.

Wiring

Schematic wiring diagram of the 1956 Ford system is shown in Fig. 9. Diagram of the wiring in the 1957 system is shown in Fig. 10.

SERVICE HINTS

Evacuating System

Ford recommends the use of a vacuum pump for evacuating a system following initial installation or after service operations which involve opening up the system.

A vacuum down to between 25 and 30 in. should be pulled on the system with a vacuum pump. Failure to get as low as 25 in. could indicate a leak, which would have to be repaired before the evacuation process can be completed.

The vacuum of 25 to 30 in. should be maintained by the vacuum pump for 20 to 30 minutes. Vacuum is broken with Refrigerant-12.

Charging System

Ford systems are charged through the low side in the usual manner with Refrigerant-12 in the vapor state. Complete charge is 4½ lbs. in 1956 units; 3½ lbs. in 1957 models.

During the charging operation the car engine should be operated at 1,500 r.p.m. with the temperature control lever set for maximum cooling and the blower on high speed.

This applies to both the 1956 and the 1957 systems.

Operating Pressures

Normal operating pressures of the 1956-57 Ford air conditioners are determined by running the car engine at 1,500 r.p.m. with the control set for maximum cooling and the blower on high speed.

At an ambient temperature of 75° F. the suction pressure should be between 16 to 25 p.s.i.g. and the head pressure between 100 and 180 p.s.i.g.

For every 10° increase in ambient temperature, Ford advises, the pressures will increase approximately 20 p.s.i.g. Under severe conditions of 110° F. ambient temperature and the engine idling, this will not hold true, however. Discharge pressures as high as 300 p.s.i.g. might be registered under such extreme conditions, Ford says.

Operating Temperatures

Normal operating temperatures for 1956 and 1957 Ford systems are determined with the engine operating at 1,500 r.p.m., control set for maximum cooling, and blower operating at high speed.

At an ambient temperature of 75° and relative humidity of 50%, temperature in the right top outlet should be approximately 40° F.

Generally, at 50% r.h. the outlet air temperature should be about 35° below the ambient temperature. If the humidity is higher than 50%, the temperature differential will be less, and if the humidity is less than 50%, the outlet temperature will more closely approach the evaporator setting of 32° F.

Adjusting Thermostat

The thermostat employed on the 1956 Ford system to operate the solenoid by-pass valve is set at the factory to cut out at 28° F. and cut in at 34° F. This

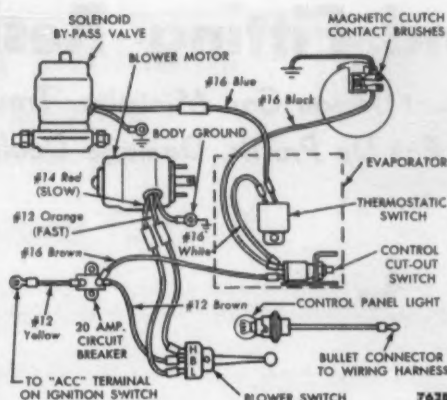


FIG. 9—Schematic wiring diagram of 1956 Ford system.

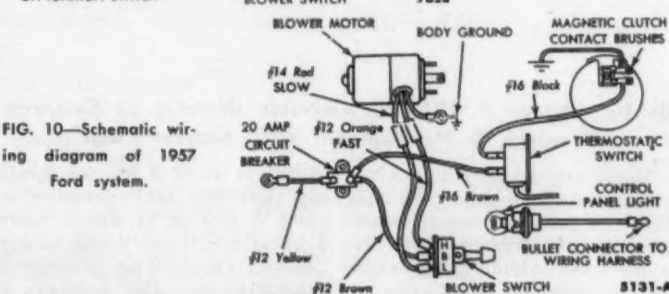


FIG. 10—Schematic wiring diagram of 1957 Ford system.

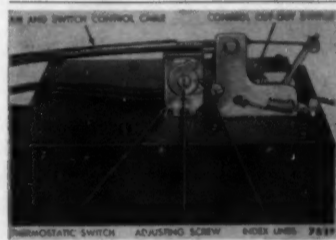


FIG. 11—Thermostat of 1956 Ford system can be adjusted in field to change cut-in and cut-out points of solenoid by-pass valve.

setting is indicated by scribe marks (Fig. 11) on the thermostat, which is accessible after the glove compartment box has been removed.

This thermostat can be adjusted in the field, which may be necessary if the car is operated in extremely humid climates, or may be desired in extremely dry climates.

Turn the thermostat adjustment screw clockwise to lower its settings; counter-clockwise to raise them.

Adjusting Cables

Cables that connect the control levers to the air valves or

dampers, switches, etc. of the 1956 and 1957 Ford systems should be checked for adjustment whenever the evaporator or control has been removed, or every 5,000 miles, or if service complaints so indicate.

The cables can be adjusted at either the control lever end or the other end.

In checking the adjusting control cables, refer to the previous section under "Controls" to determine positions the various air valves, etc. are supposed to be in at different settings of the control levers.

(To Be Continued)

Boston Supply Firm Moves to New Quarters

BOSTON—After 12 years at its former location on Brighton Ave., Supply Distributors Corp. has moved to new quarters at 352 Western Ave. here.

Because of the growth of this concern in the past few years, it was felt that more than 15,000 sq. ft. of working area and ample parking facilities would be needed.

Supply Distributors Corp. is a member of the national ARW, and Charles G. Koopman, general manager, serves also as vice president of the national association.

In commenting on the move, Koopman said, "We hope our new approach to a modified type of self-service will prove to be workable enough to further spark the trend of self-service by wholesalers."

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Carrier's Present Policies, Future Objectives--

(Concluded from Page 1, Col. 3) that houses the administrative offices and the "pure research" laboratories of the corporation.

However, the editors (and the industry generally) would probably agree that the news of the conference came out of the picture of some of Carrier's present thinking and future planning gleaned from a question-and-answer session with Wampler, President William Bynum, Senior Vice President Lyle Harvey, Dr. J. F. Downie Smith, research and development vice president, Melvin C. Holm, vice president and chief financial officer, and Fred F. Hoyt, vice president and assistant to Wampler.

The following are some of the more newsworthy points made in the session:

Carrier is in the room air conditioner business "to stay" despite the fact that this product accounts for probably no more than 5% of the company's total dollar volume, and it is an item on which it is difficult to realize any substantial profit.

Why Carrier Won't Leave Room Unit Field

"We could not leave the room air conditioner out of the line and still say that the Carrier distributor or dealer is a 'complete center' for air conditioning," was Wampler's explanation.

Field tests are being conducted this year on 75 installations of gas-operated air conditioners (air-cooled, absorption type, 3 tons' capacity). If the field tests are deemed successful, and if

it seems likely that the units can be produced and sold at competitive prices, then the units will go on the market in 1959.

"There are many areas in which the gas air conditioner can be a very big factor because of low operating costs and low installation costs in homes where gas service is already connected," said Harvey. "Gas utilities are eager for the summer load that air conditioning can provide, and they are preparing to promote air conditioning in a progressive manner."

The heat pump is very much in the picture at Carrier, Wampler said, and this fall the firm will introduce new models with substantial improvements. Among the units will be a series of one-piece models which can be installed in an attic, top of a closet, or basement window. Another development "will bring a 15% increase in heating efficiency, broadening the use of heat pumps in winter air conditioning."

Researchers Working On Peltier Effect

Research is being carried out in Carrier's research laboratories on "electronic" (thermo-electric) systems, using the Peltier effect, and also in the field of the possible application of atomic energy in the field of air conditioning.

Dr. Smith revealed that the company is backing further research on thermo-electric systems outside of its own facilities. However, he said that any commercial application of the Peltier effect would be dependent upon the development of the dissimilar metals which could be used in a system that would provide the required cooling and heating effects, and the production of such metals at a reasonable cost.

The study of atomic energy is being carried on along the lines of both the utilization of atomic energy as a heat transfer possibility, and as a driving force.

However, it seemed obvious from the activity in the laboratories, and also from Wampler's words, that Carrier is centering most of its attention presently on the possible use of high speed compression systems.

Answering a question on the "miniaturization of air conditioning equipment," Wampler said that "a radical design approach based on present-day cooling principles seems to offer the greatest promise for the near future." He cited the example of the air conditioning unit which Carrier is making for jet airliners (described in detail in the May 12 issue of the NEWS) and said that "one football-sized compressor in this assembly generates enough cooling to handle seven average homes."

Miniaturization Key Is Speeded Up Drive

The trick in reducing the size of present-day equipment is to increase the speed of motors or other driving devices. Projects in the research laboratory are working both in the motor and turbine field in this respect. A big problem in high speed systems is the matter of whether seal and bearing surfaces will hold up; other research projects are busy on this point.

"A new filtering approach which appears entirely practical and economical is currently moving through the field test stage," said Carrier's chairman. It is aimed at eliminating odors

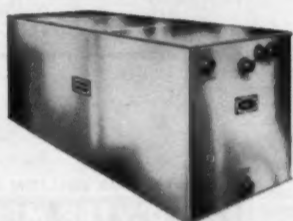
as well as cleaning the air, so that "homemakers can banish not only the unpleasant atmospheric conditions, but also the odor of cabbage and cauliflower from their households forever." Other research projects are concerned with the removal of bacteria and virus from the air.

Working on Salt Water Conversion

A project which might seem remote from the industry's normal line of business, but which actually has a couple of areas of direct concern, is that of conversion of salt water to fresh water.

Under a contract with the Department of Interior, the company is currently designing a pilot plant which will desalt 15,000 gal. of water a day. The goal of this government-sponsored program is to find a practical means for large-scale salt water conversion at a cost including owning and maintenance as well as operating expense of less than \$1 per thousand gallons.

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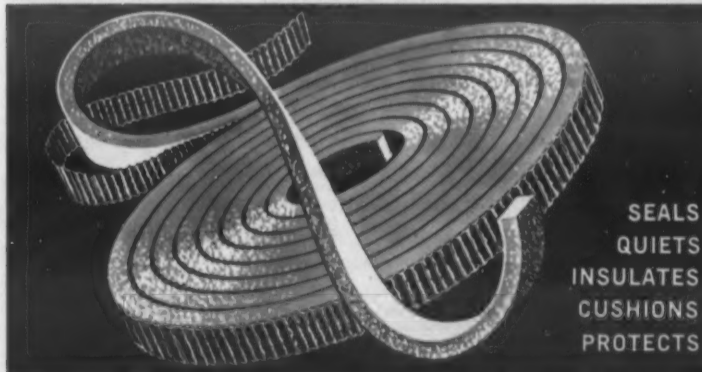
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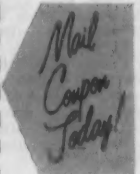


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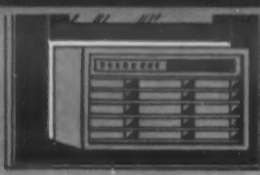
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PATENTS

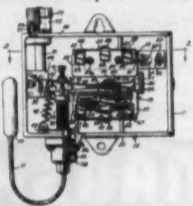
Week of March 25
(Concluded)

2,828,178. REFRIGERATOR COMPARTMENT SHELF AND GUARD ASSEMBLY. John A. Dahlgren, Louisville, Ky., assignor to General Electric Co.



1. In a refrigerator door of the type having a recess therein for storage of foodstuffs, a shelf construction comprising a C-shaped wire frame supported within said recess, said frame opening in the direction of said recess opening, a cross bar extending across the forward portion of said frame with the ends thereof attached to said frame. . . .

2,828,373. CONDITION RESPONSIVE SWITCH APPARATUS. Russell F. Swager, Rockford, Ill., assignor to Barber-Colman Co., Rockford, Ill.



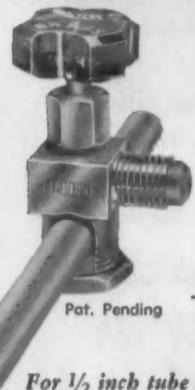
1. Condition responsive apparatus having, in combination, a support, a lever fulcrumed on said support to swing back and forth in response to changes in the condition being sensed, two snap action switches mounted on said support on opposite sides of said lever and each having a movable contact carried by an over-center spring. . . .

2,828,464. CONTROL OF AIR-CONDITIONING APPARATUS. Leslie Reginald Nixon, deceased, late of Catford, London, England, by Edith Maund Nixon, executrix, Catford, London, and William Grant, Brockley, London, England, assignors to J. Stone & Co. (Deptford) Ltd., Deptford, London, England.



1. In combination with apparatus for controlling the condition of air in an enclosure and including a polarity-discriminatory arrangement, a Wheatstone-bridge device responsive to the said condition and having limbs consisting of sensing means, balancing means, and ratio means, said sensing means comprising a dry-temperature sensitive resistor element and a wet-temperature sensitive resistor element each having a high temperature coefficient of resistance. . . .

PERFORMANCE PROVED!
Madden HP-41
Hermetic Port Valve



1 VALVE
PIERCES
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3/16 1/4
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For 1/2 inch tube ask
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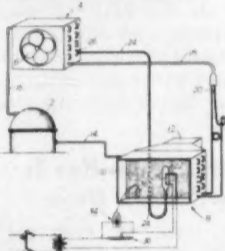
2,828,391. DEFROST CONTROL MECHANISM. John L. Slonneger, Morrison, Ill., assignor to General Electric Co.



1. A defrost control comprising a frame, a switch mounted on said frame and having an operating member, a toothed wheel journaled on said frame, a rigid pawl arm supported for reciprocating motion on said frame, a rigid hammer arm supported for swinging motion on said frame. . . .

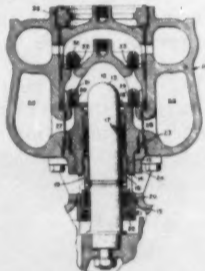
Week of April 1

2,828,614. AIR CONDITIONER. Lewis R. Smith, Auburn, N. Y., assignor to Remington Corp., Auburn, N. Y.



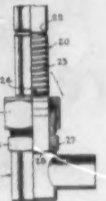
1. In an air conditioning unit, the combination of, a refrigeration system having an air cooled condenser which is subjected to change in ambient temperatures and a compressor which delivers compressed refrigerant thereto and having an evaporator and capillary tube restrictor means through which refrigerant flows from said condenser to said evaporator. . . .

2,828,696. PACKING FOR A RECIPROCATING PUMP. Elliott F. Wright, Plainfield, N. J., assignor to Worthington Corp., Harrison, N. J.



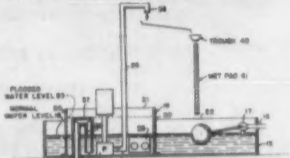
The combination of a reciprocating pump having a pumping chamber therein, a plunger disposed for reciprocating movement in said pumping chamber and supported thereby, said insert comprising a hollow cylindrical body arranged around said plunger. . . .

2,828,759. REFRIGERATION PIPING CONNECTOR. Carlton M. Gerhart, Jr., York, Pa., assignor to York-Shipley, Inc., York, Pa.



1. A coupling for field connection of pre-charged remote refrigerating or air-conditioning units comprising: a male fitting; means sealing the end of the male fitting, including a member heat-releasably joined thereto; spring means biasing said member outwardly of said male fitting. . . .

2,828,761. SELF FLUSHING DEVICE FOR EVAPORATIVE COOLER AND COOLING TOWER SUMP. Bayard E. Welbert, Jr., Roswell, N. Mex.

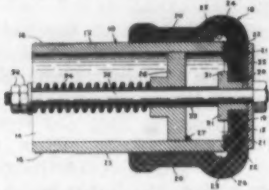


1. In an evaporative cooler of the type which includes a sump, means supplying water to and maintaining a normal water level in the sump, and means including a pump drawing water from a zone in the sump below said normal water level and transferring said water to an elevated portion of the cooler. . . .

2,828,765. LIQUID DISTRIBUTION DEVICE. Louis G. Hilkemeier, Plainfield, N. J., assignor to Worthington Corp., Harrison, N. J.

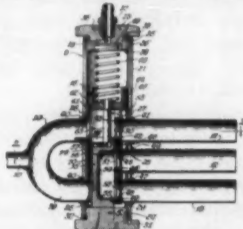
1. A liquid distribution device for mixers comprising a hollow body having an inlet to pass liquid therein and an outlet to discharge liquid therefrom, means for connecting the body

to a source of liquid under pressure, resilient valve means comprising a disc valve having a skirt extending there-



from, an annular ring formed on the inner side of the disc adapted to seat on said outlet end in fluid sealing engagement. . . .

2,828,767. REVERSE CYCLE VALVE. Edward J. Barusch, Coral Gables, Fla.



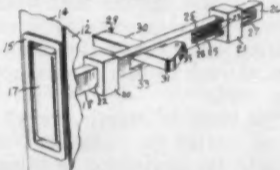
1. A reverse cycle valve comprising a metallic casing provided between its interior and exterior with an inlet opening for fluid under pressure and having in a portion of one wall thereof a rectilinear series of three spaced apart circular holes, an elongated separately formed plated disposed in the casing interior, positioned in parallel relation with, and a small distance inwards from. . . .

2,828,889. BEVERAGE VENDING MACHINE. Raymond C. Joschko, Minneapolis, Minn., assignor to Pratical Products Co.



1. In a drink vending machine; a source of non-carbonated water; a source of carbonated water; a container for a flavoring ingredient; conduits leading from the sources of carbonated water and non-carbonated water and said container to a common dispensing zone. . . .

2,828,991. REFRIGERATOR LATCH MECHANISM. Wlodzimierz Jan Stiller, Port Washington, N. Y.



A door latch mechanism for refrigerators having a cabinet and a door hingedly secured thereto for rotation

Removes MORE SCALE per Dollar Spent!

VAPCO SCALE REMOVER

The activated acid in powder form containing inhibitor, wetting agent and algicide for a COMPLETE cleaning job under the most severe conditions. Easy on galvanize—safe for equipment. Keeps head pressure down—efficiency UP! 10 and 50 pound drums with "Tel-Action" pH indicators.

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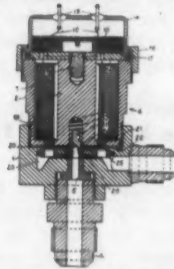
Make your own cleaner with VAPCO-HIB. Added to muriatic acid, VAPCO-HIB increases the acid action, yet provides outstanding protection to metals including galvanize. Supplied in 8 and 32 ounce bottles and bulk.



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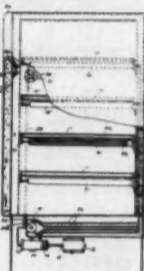
about a longitudinal axis, a hook rigidly secured to said cabinet and an operator rod slidably carried by said door for movement between a hook engaged and a hook released position. . . .

2,828,938. EXPANSION VALVES FOR REFRIGERATION PLANTS. Richard Thomas Hales, Bexley, England, assignor to J. & E. Hall Limited, Dartford, Kent, England.



1. A magnetic valve structure, comprising, in combination, housing means defining a valve chamber, fluid inlet and outlet means in communication therewith, and a valve seat intermediate said inlet and outlet means; a spherical valve member arranged in said valve chamber and movable relative to said valve seat between valve-open and valve-closed positions. . . .

2,829,022. REFRIGERATOR WITH SLIDING SHELVES. Roy E. Lewis, Atlanta, Ga.



In a refrigerator including a base and side walls, said side walls having internally positioned spaced apart pairs of horizontal guides thereon, a plurality of shelves slidable in said guides, a fluid operator. . . .

To Cool Auditorium

DENTON, Texas—John A. Guinn, president of Texas Woman's university, announced that Mrs. Nelda Childers Stark of Orange will donate funds to air condition the main auditorium on the campus.

NEW No. 460 AIR METER

by **Dwyer**



High and low ranges give direct velocity readings from 260 to 4000 fpm.

Static pressure readings from .005 to 1.0 inches of water.

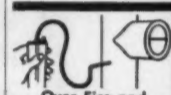
Complete with every accessory... fits in shirt pocket.



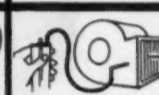
Supply Grille Velocity



Return Grille Velocity



Over-Fire and Smoke Pipe Draft



Static Pressure

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EQUIPMENT FOR SALE

NEW TECUMSEH compressors—Freon refrigerant 114-1/2 h.p., 115V: 130-3/4 h.p., 115V: 42-3/4 h.p., 230V: 10-3/4 h.p., 208V: 75-1 h.p., 230V. All below manufacturers cost. Write, phone or wire. AMANA REFRIGERATION, INC., A. C. Schneider, Amama, Iowa. Phone Main 2-5511.

NATIONALLY FAMOUS brand new hermetic motor compressor comes at closeout prices! 1/4 h.p. only \$35.00. Other sizes up to 1 1/2 h.p. at equally low prices. Also, tremendous savings on complete hermetic condensing units ranging in size from 1/2 h.p. All brand new, all guaranteed. Send for listing and prices to MANN REFRIGERATION SUPPLY CO., 440 Lafayette St., New York, N. Y. GRamercy 3-8000.

SURPLUS INVENTORY: 144 new hermetic compressors 1/2 to 1 1/2 h.p. Copeland, Servel, Tecumseh. 579 new fan motors 1/2 to 1 1/2 h.p., Century,asco, G.E., Marco, Wagner. 1550 new compressor overloads, starting relays, capacitors. Priced way below OEM costs. For complete list contact Ray Richardson, REMINGTON AIR CONDITIONING, Auburn, New York, 3-7371.

REPOSSESSED REFRIGERATION equipment. Air conditioning and freezer applications. Frigidaire, Brunner, Worthington 3 h.p. to 40 h.p. units. Larkin, Bush, Kramer Thermobank, freezer blowers. U. S. Air Cond. and Worthington evaporative condensers. Kramer Union. Less than 1/2 of dealer cost. Write for details. ROCKLAND REFRIGERATION, Nyack, New York.

WELL KNOWN brand condensing units: Open type (New) 1/4 hp air cooled—less motor \$55.00. 1 1/2 hp. water cooled—less motor \$144.00. 3 hp. water cooled—less motor \$175.00. FOB Chicago, Illinois. Send for bulletins and catalog on money saving refrigeration values: WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

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SPECIAL WORLD TRADE ISSUE

A COMPREHENSIVE PICTURE OF THE CURRENT WORLD MARKETS

AIR CONDITIONING & REFRIGERATION NEWS announces a Special World Trade Issue reporting on the current world market for air conditioning and refrigeration equipment.

This issue will have extra foreign distribution in addition to the regular strong international circulation among buyers of equipment in every major foreign market.

The Special World Trade Issue, to be published August 4, 1958, will include these important editorial features: an analysis of opportunities in world trade; a review of the growth of air conditioning and refrigeration export; a look at the major free-world areas open to profitable export sales; what is being sold and who is selling it; and a comprehensive

report by Editor-Publisher George F. Taubeneck on his just-completed tour of world markets.

Hard-hitting, on-the-spot editorial features such as these plus many others mean that the August 4 issue of the NEWS will be read and referred to time and time again by contractors, dealers, distributors, manufacturers, and wholesalers both here and abroad.

Suggestions for using this issue:

1. Display your foreign plants and personnel.
2. Show your leading export products.
3. Feature your foreign distributors.
4. Outline your export policies.
5. Highlight your export department or division.

6. Call attention to your experience in serving foreign markets.
7. Advertise for additional foreign distributors.
8. Introduce new export products to the market.
9. Support your foreign distributors and dealers.
10. Spotlight specific foreign installations.

If you plan to participate in or are now operating in foreign markets, the NEWS' Special World Trade Issue is an unusual opportunity to promote your activity.

What's more the Special August 4 issue—with extra international distribution to "tell the world" your story—is offered at no increase in regular advertising rates!

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GE Establishes Factory Branches In New Jersey and Cleveland Areas

BLOOMFIELD, N. J.—Establishment of factory branches in the New Jersey and Cleveland areas and the appointment of managers for them was announced recently by William A. Mulcock, manager of sales and distribution for the air conditioning department of General Electric Co.

The New Jersey branch has been established in Passaic and will directly serve franchised dealers in Bergen, Essex, Hudson, Morris, Passaic, Somerset,

Sussex, and Union counties. It will also serve Middlesex, Monmouth, and Ocean counties with certain exceptions.

The area was formerly served by Home Heating & Cooling Distributors, Inc., which represented General Electric for 10 years until the recent retirement of its president, James H. Wright.

New Jersey branch manager is A. S. Garven, formerly sales representative in the upper New England area now working out of the Boston office. He joined the air conditioning department in February, 1955 from the air conditioning department of Canadian General Electric Co. He had been with that firm since 1936.

Also appointed to the New Jersey branch are Ian Dennis,

sales manager, and Gordon Deso, operations manager.

In Cleveland, General Electric has arranged to establish a factory branch to serve independent distributors in Ashtabula, Cuyahoga, Erie, Geauga, Huron, Lake, and Lorain counties.

Irving Pittleman, for the past two years district manager in the Cleveland area for national account sales and special projects for the air conditioning department, has been appointed branch manager.

H. W. Gerte, with seven years of financial experience at G-E, will serve as operations manager.

Site for the new branch has not yet been determined. Temporary headquarters are located at 20310 Kinsman Rd.

General Electric's air conditioning department has only three other factory branches at present. They are at Winter Park, Fla., Los Angeles, and Birmingham, Ala.

Miami Cooling--

(Concluded from Page 1, Col. 4)

ing and heating.

"Of all homes in the \$15,000-\$20,000 bracket and higher, about 60% now install central cooling systems. And most of the rest include facilities—ducts and refrigerating unit space—for later equipment installation.

"We're just beginning to scratch the residential air conditioning demand," he continued. "It's a vast market and every manufacturer is after it. An almost immediate result of that aim," Gignac said, "is a cut in the cost, which has been marked during the past year.

"Main reasons for the cost cut have been a trend toward package units in central systems and the development of new duct material.

"The packaged units—usually an air conditioning machine with reverse-cycle heating or a

cooling unit coupled with a gas or oil heater—cut sharply into 'field labor' costs of installation. In my opinion, residential air conditioning costs have been chopped 25% in the past year.

"Biggest advance in ductwork," he continued, "is the use of a mineral glass wool air duct instead of the old galvanized iron and insulation.

"A central system which used to cost \$1,800 to install can now be done for about \$1,000," Gignac declared.

If air conditioning executives are bullish on current and future prospects for residential demand, they are no less sanguine about the outlook for commercial air conditioning, which now comprises about 65% of the industry's volume.

"It's increasing tremendously year by year," Gignac declared. "And no wonder—it's gotten so that any small shop without air conditioning will have a hard time staying in business."

GE Move--

(Concluded from Page 1, Col. 4)

Carl A. Salmonsens, who had been appointed general manager of the department after its status changed from a division to an operating department. Ramsdell is also announcing the following appointments to marketing posts:

W. A. Mulcock has been named manager of sales and distribution, and the four regional managers who will report to him are: H. W. McMenimen, New York City; P. M. Hooven, Atlanta; W. H. Grant, Chicago; G. H. Christine, Dallas.

L. H. Hirschbach becomes manager, sales and distribution planning. W. F. R. Karsten is manager, commercial engineering. J. J. Heffernan is manager, advertising and sales promotion; R. D. Roley is manager, product planning; J. A. Sherman is manager, marketing administration; and C. J. Rigby is manager, water cooler sales.

These moves, said Ramsdell, will enable the department to operate under one set of policies and procedures, and should strengthen communications with the G-E distributors.

He also informed the distributors that the establishment of two new factory branches (see story above) should not be interpreted as any over-all move on the Department's part to go to a factory branch system of distribution generally.

"We expect to continue to support independent distributors where successful operation and continued growth is indicated," he stated.

Hass Is Dryomatic Pres.

ALEXANDRIA, Va.—Election of Anthony Hass as president has been announced by the board of directors of Dryomatic Corp., manufacturer of chemical dehumidifiers for industrial and household uses.

Hass has served as vice president and sales manager of the corporation since 1950.

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Precision-designed and performance-proven to solve your refrigerating problems... efficiently... economically

LOW TEMPERATURE UNITS

All feature Bohn's unique, hermetically-sealed automatic defrost system... eliminates extra wiring, extra piping, costly control valves. All with grained aluminum cabinets, rust-proof fittings, life-lubricated motors.



MODEL LC Unit Cooler
For large walk-ins. 6000 to 24,000 BTU/hr. cap. at 10° T. D.



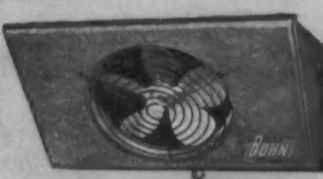
MODEL LM Mullion Lo-Temp
For upright freezers. 1400 and 1900 BTU/hr. cap. at 10° T. D.



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For reach-ins and small walk-ins. 1000 to 1900 BTU/hr. cap. at 10° T. D.

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For reach-ins. 1000 to 3000 BTU/hr. capacity at 10° T. D.



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For small applications. 850 to 1500 BTU/hr. capacity at 10° T. D.



MODEL UM Mullion Unit
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MODEL HR Half Round
For walk-in coolers. 2600 to 10,800 BTU/hr. capacity at 10° T. D.



MODEL UC Unit Cooler
For walk-in coolers. 2600 to 20,000 BTU/hr. capacity at 10° T. D.

MODEL D
For beverage boxes and back bars. 1300 to 2300 BTU/hr. capacity at 10° T. D.



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